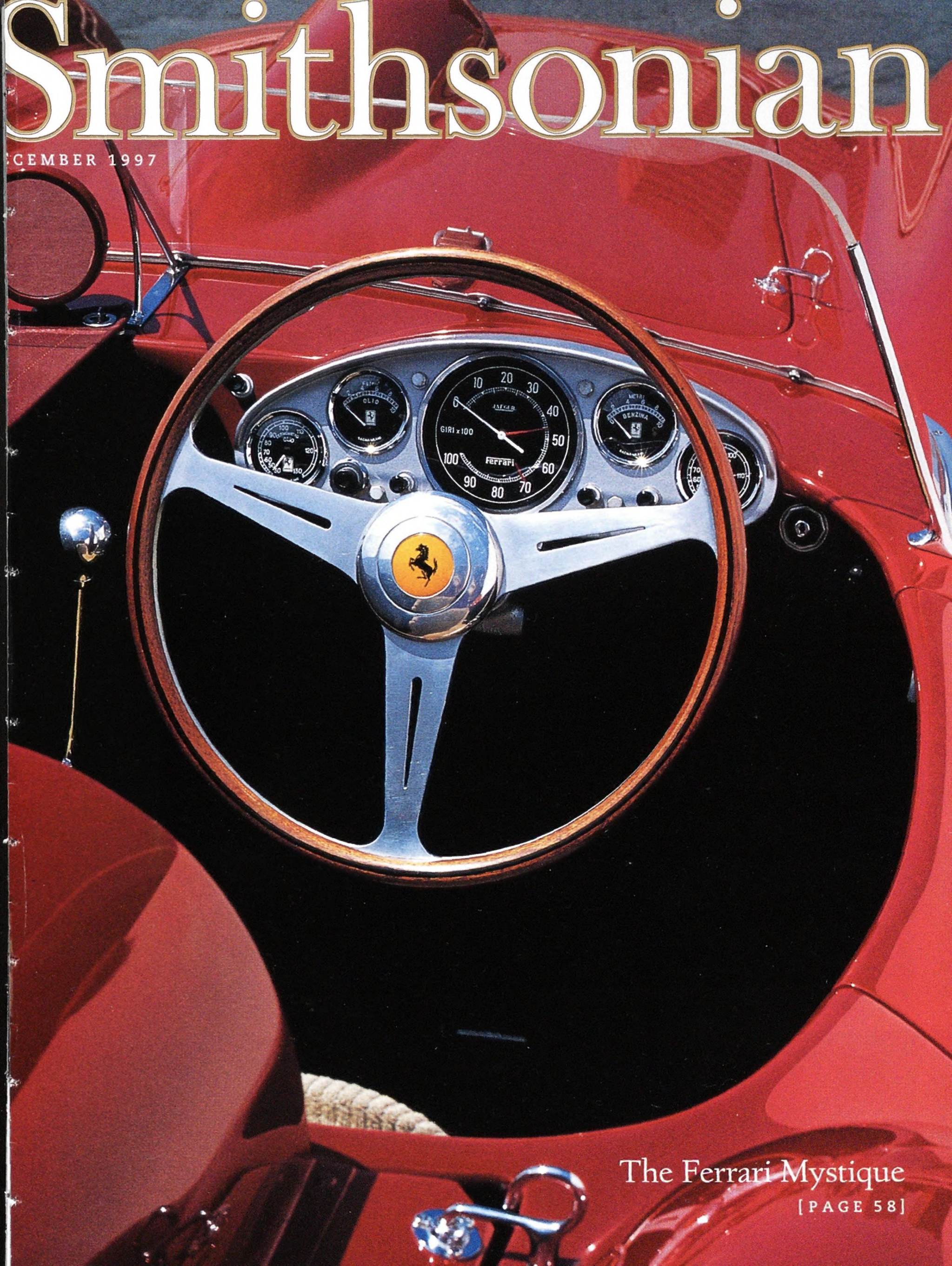
Smithsonian

ECEMBER 1997



The Ferrari Mystique

[PAGE 58]

AT THE CHRYSLER CORPORATION, EVEN OUR HISTORY LOOKS FORWARD.

January 5, 1924:
W.P. Chrysler introduces the first automobile with his name on it. Advanced for its time, it offers a 68 horsepower engine, four-wheel hydraulic brakes, and cool round headlights.

September 14, 1997:
Automotive journalists gather in Austin, Texas, to drive the all-new 1998 Chrysler Concorde and Dodge Intrepid. Local armadillo population goes on alert.

May 7, 1997:
A jaw-dropping formation of purple Plymouth Prowlers cruises the Sunset Strip in West Hollywood, California, to mark the Prowler's official introduction. The automotive gods are smiling.

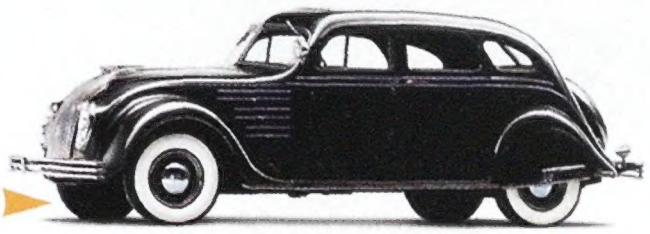
Even with a heritage as rich as ours, we spend most of our time thinking about what's next. It's how we invented the minivan and reinvented the American sports car. And re-engineered the architecture of the passenger car with cab-forward design. The fact is, we have a history of getting there first. What we learn there eventually makes its way into your next vehicle. And makes it better. Besides, as

Call toll-free 1-888-GREATCARS.

www.chryslercorp.com

May 27, 1930:
Chrysler Building is completed in New York. A writer comments it "gleams like a giant hubcap."

January 11, 1932:
One of the most distinctive open cars ever created (or so judges at vintage car shows tell us), the Chrysler Imperial grabs a dozen speed records in its class.



January 22, 1934:
Chrysler introduces the Airflow—the most radical car ever (so far). Based on aircraft design principles, it ushers in a new age of automotive design.

September 14, 1969:
What's cooler than watching this Dodge Charger Daytona blow past the competition at Talladega? Going to the dealer and taking one home.

June 17, 1996:
After astounding car show crowds for over a year, the Dodge Viper GTS Coupe slithers into showrooms.

January 15, 1994:
Automobile Magazine bypasses new models by Mercedes-Benz, BMW, and Volvo in naming the all-new Neon its "Automobile of the Year." (Must be the cool round—okay, oval—headlights.)

car company, we like being out in front. The view
better, and the ride, a lot more exciting. Whether
ou're looking backward or forward, that's what
uilding great cars and great trucks is all about.

Always use seat belts. Remember, a backseat is the safest place for children.

GREAT CARS.
GREAT TRUCKS.
CHRYSLER CORPORATION

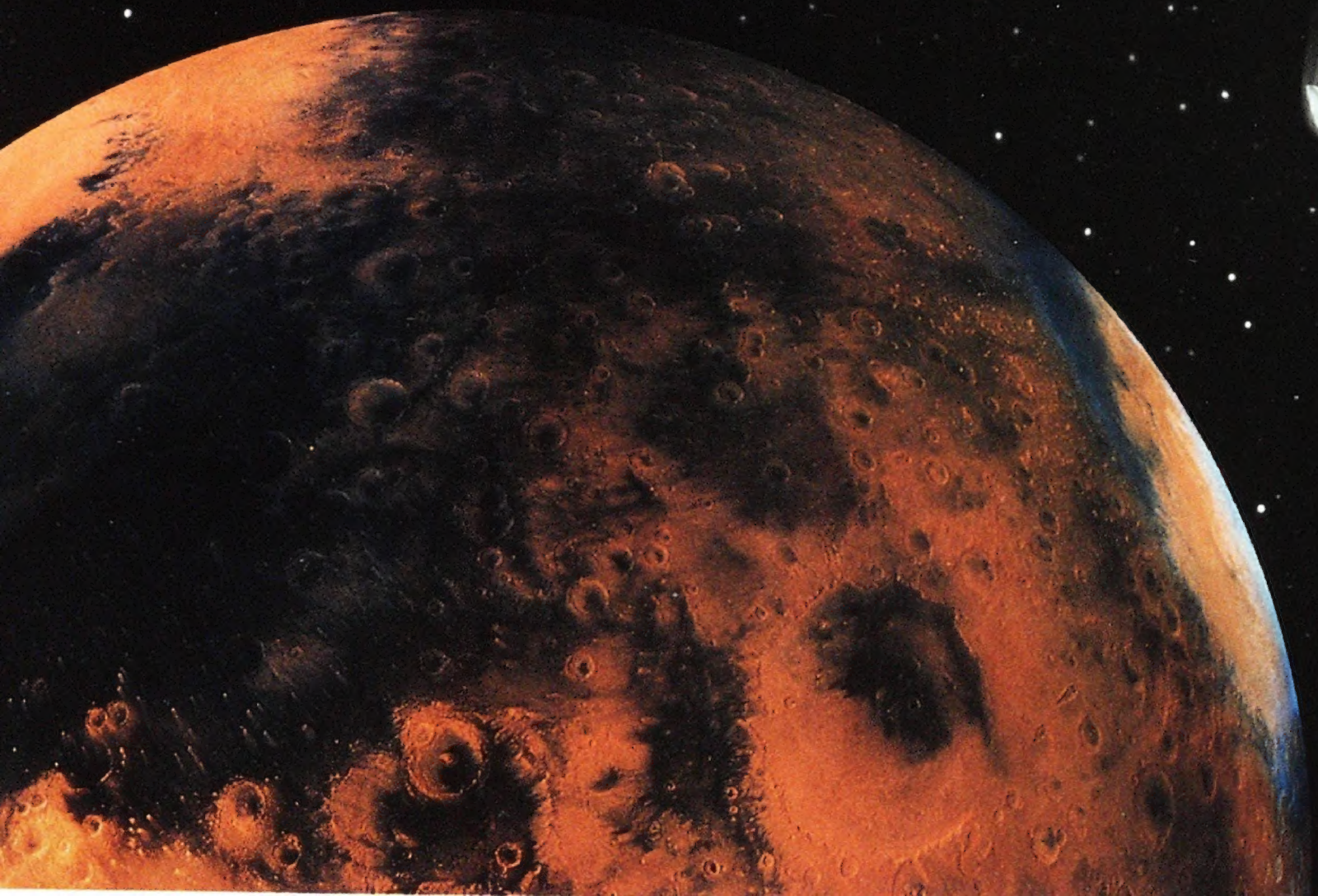
If you think it's hard getting to

MARS

try getting to plaque three millimeters

BELOW THE

GUMLINE.



With all due respect to the Pathfinder program, exploring the farthest reaches of *inner* space can be almost as challenging. That is, unless you have the **sonicare**® sonic toothbrush. Not only does it remove plaque bacteria from the surface, its 31,000 brush strokes per minute also create sonic waves which go *beyond the reach of the bristles.*™[1] Gently cleaning between teeth and even below the gumline.[1] In fact, **sonicare** removes hidden plaque bacteria between teeth better than the leading power brush.[1] So like the Mars Sojourner, we too like to seek out life forms in hard-to-reach places. Only we blow them away.

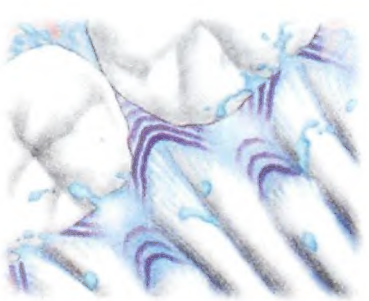
In a recent study, **sonicare** *removed over 7 times more decay-causing bacteria between teeth than Braun.*[1]

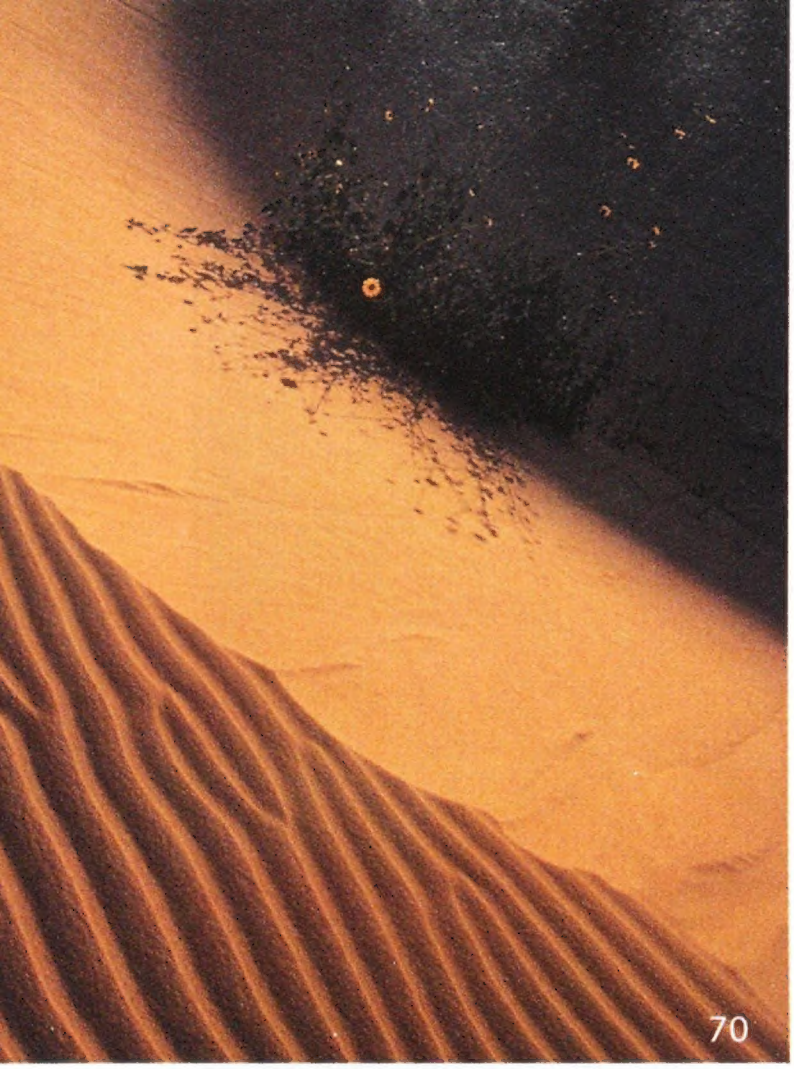
- Reduces the risk of gum disease.[1] Proven to help shrink periodontal pockets[1] and reverse gingivitis.[1]
- Cleans so effectively, it gently removes over 80% of coffee, tea and tobacco stains.[1]
- The two-minute *smartimer*™ helps ensure the dentist-recommended brushing time.
- We guarantee a better check-up. If you don't have one after 90 days, we'll gladly refund your money.
- Ask your dentist or hygienist. Over 98% of those who've tried us, recommend us.[2]

For more information call 1.888.676.SONIC
www.sonicare.com

sonicare®
A better kind of clean.™

sonicare *creates sonic waves that go where no ordinary brush has gone before. Removing plaque bacteria between the teeth.*





SMITHSONIAN

features

DECEMBER 1997 ♜ VOLUME 28, NUMBER 9

46 The Long Walk to Bosque Redondo
In 1864, thousands of Navajos were relocated in a grueling 300-mile journey; a new memorial will recall their ordeal
BY DAVID ROBERTS ♜ ILLUSTRATIONS BY ARTHUR SHILSTONE

58 This Is Not Your Father's Automobile
And it probably isn't your car either, but when the Ferrari sings the "song of 12 cylinders," how you'll wish it were
BY BRUCE WATSON ♜ PHOTOGRAPHS BY ENRICO FERORELLI

70 Will the Dunes March Once Again?
If the sand on the Great Plains starts moving, as it has in the recent past, miles of this country could become inaccessible
BY DANIEL JACK CHASAN ♜ PHOTOGRAPHS BY ADRIEL HEISEY

82 The House that Art Built
Once said to have more money than taste, the Getty Trust has amassed a fine collection—and a place to show it off
BY STANLEY MEISLER ♜ PHOTOGRAPHS BY CHAD SLATTERY

96 The Belled Viper
A docile homebody now threatened with extinction, the timber rattler is just as surprising as the myths that surround it
BY SCOTT WEIDENSAUL ♜ PHOTOGRAPHS BY DAVID W. HARP & CARL A. HESS

114 Mutiny on the *Amistad*
In 1839, Africans seized a ship at sea to escape enslavement. Were they "property" or freemen? U.S. courts had to decide
BY DONALD DALE JACKSON

128 Hands-on Toys
With a little imagination and skill, bottle caps, tuna cans, even old flip-flops, are crafted into remarkable playthings
BY PAUL TRACHTMAN ♜ PHOTOGRAPHS BY TOM MORILLO

136 Look at Me
No stunt was too much for millionaire fitness guru Bernarr Macfadden—until he tried to muscle his way into politics
BY JOSEPH F. WILKINSON

My Pentax IQZoom 160

My Photo

My portrait of Sophie. (Showing off the grace she must have inherited from me.)

This is the five-point passive autofocus system that measured how far away Sophie was, chose the optimum setting, and kept my focus sharp.

This is the six-segment metering that measured lighting, compensated for background sunlight, and kept Sophie's performance unclouded.

This is the fail-safe loading technology that let me slip in a new roll of film between "Dance of the Butterflies" and "Sophie's Solo."

This is the power zoom lens that went from 38mm to 160mm so I could capture Sophie's pirouette from Row 10 and stay out of the way of the proud parents in Row 2.

Aren't your pictures worth a PENTAX®?

See our complete line of point and shoot cameras at your nearest dealer or browse at **www.pentax.com.**

See a world or two. Visit the new Hong Kong

For 156 years, she has blended Western culture and Oriental mystique. Her stunningly futuristic skyscrapers watch over centuries-old temples. Department stores offering next year's designer fashions stand alongside colorful street vendors selling Chinese antiques. In the world's busiest harbor, giant freighters share waters with quaint ferry boats bound for the unspoiled beauty of her outer islands. A tram ride to Victoria Peak offers an inspiring look at some of Earth's most magnificent scenery; so does the proud presence of British Colonial architecture. You can explore rustic countryside by day and by evening, luxuriate in one of her legendary hotels. She is the New Hong Kong, a world of fun and fascination.

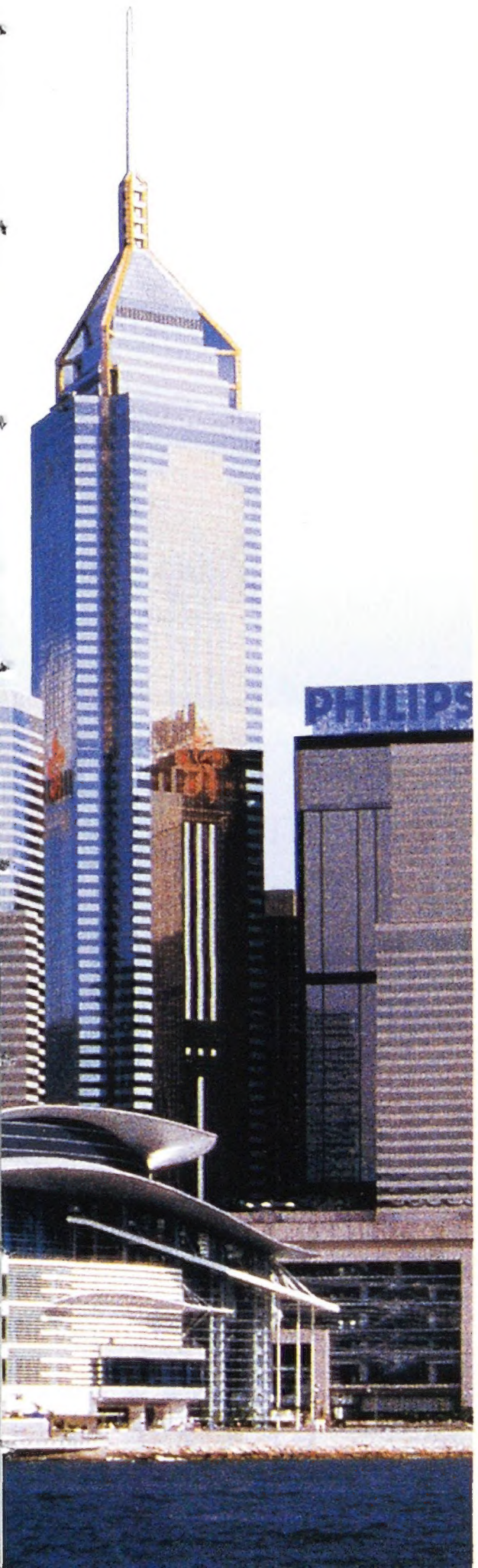
Asia & Pacific Explorer Cruises offers a choice of eleven regional itineraries to Hong Kong as well as other popular locations. Aboard the luxury liner Nieuw Amsterdam, you'll delight in five-star service provided by a renowned Indonesian and Philippino staff. And since you'll get to know most destinations firsthand during shore excursions, our "Flagship Forum" prepares you with the cultural, historical, political and religious background of the destination. For travelers looking for more in depth exposure, "Overland Adventures" lets you disembark at one port, stay awhile, and rejoin the ship later on. And those desiring even more excitement can choose pre- and post-vacation packages combining Hong Kong city tours with air travel into the very heart of China.

Why not celebrate the best time of your life with an Asia & Pacific Explorer Cruise? After all, you've earned it. For more information, contact Holland America Line at 1-800-426-6593 or the Hong Kong Tourist Association at 1-800-282-HKTA.

Holland America Line
A TRADITION OF EXCELLENCE®

Frommer's Hong Kong

First in a series by famed travel-writer Arthur Frommer



How should I start my mini-travel guide to Hong Kong? With the initial impression. Its skyline of skyscrapers is as massive as Manhattan's - modern, gleaming and vast but crammed into the narrowest of space between a choppy sea and a rocky mountain chain. Its harbor and shipping lanes, crisscrossed by oddly-shaped sampans and Chinese junks with bat-like sails, have a beauty that compares with any other on earth.

This is the quintessential Chinese city and capital of Chinese culture, vibrant and dynamic, bursting with life and vitality. Here are shops with the most exotic of goods, storekeepers bantering with their customers, people living on boats, temples with great open fires and incense, multitudes of restaurants with joyful, inventive dishes. And everywhere: crowds, crowds, crowds.

On what should you focus in the course of a first visit? Commerce—and your own personal shopping—provide one approach. The chief industries of Hong Kong are banking and finance, conducted in the world's most advanced buildings. An important visit is to Sir Norman Foster's Hong Kong Bank Building in the center of the main business district, which breaks every architectural rule ever made, and points to the future. The more recent additions to the commerce of Hong Kong are ultra-modernistic, in-city shopping centers (of which the New World Center near the Regent Hotel, on Kowloon side, is an example) selling wares of the world's most famous couturiers and other brand-name manufacturers. But these provide only one of the shopping-style options available to you.

The smart tourist uses recommendations of the tailors found in tiny workrooms on the upper floors of lower category office buildings. You obtain these addresses from residents of your own age and outlook—in a restaurant, a hotel or on a bus. Ask them for the identity of the tailor they use, or of whom they know.

And then, in the course of your Hong Kong visit, you turn to food. A key stop is at the floating "Jumbo" restaurant in Aberdeen Harbor, reached by a free ferry service. Generally in Hong Kong, the more exotic and unfamiliar the dish, the better it is. Order the unfathomable courses at Jumbo, and you'll dine magnificently, often for as little as $10 per person.

Apart from eating magnificently, and shopping, what are the other things to do?

First, take the Star Ferry between the two major parts of the city, for the best urban view you will ever have from a boat. They go continually back and forth, but you must pay each time. Upper-deck seats cost about the equivalent of US30 cents.

Then, take the Peak Tram up the mountainside on Hong Kong Island for another spectacular view, this time from Victoria Peak, an ultra-fashionable residential area. High above the city, you'll realize just how large the New Territories of Hong Kong are, over a thousand square miles.

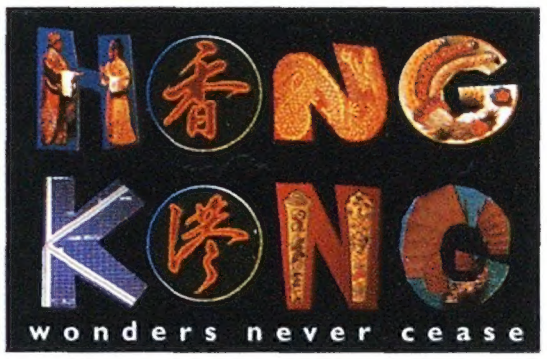
Visit the smaller shopping streets and markets, especially on the Kowloon side, such as the Jade Market, in Yau Ma Tei's Kansu Street (best in the morning), the Bird Market in Mong Kok (relocating to an improved location at Yuen Po Street toward the end of 1997), or the Temple Street Night Market (just off Jordan Road in Yau Ma Tei, best after 8 p.m.).

On the Island side, do the same thing, perhaps concentrating on Hollywood Road and Lok Ku Road, the heart of the antique district. While there, visit the Man Mo Temple on Hollywood Road, dedicated to the gods of war and literature.

At night, visit the nightlife center known as Wan Chai, even if you don't plan to patronize any of its clubs. If you find a restaurant to your liking, don't hesitate to go in and have dinner, an entirely safe activity.

And if you have the time, visit the Kam Tin Walled Village, out in the New Territories, for a glimpse of what life in ancient China might have been like. Dating back three hundred years, it is still inhabited by descendants of the original founders, all in one clan.

Hong Kong is a city that will not change. It will remain, in my firm view, one of the world's great touristic destinations.



SMITHSONIAN

departments

DECEMBER 1997 ♜ VOLUME 28, NUMBER 9

COVER

Cover The *cavallino rampante*, the symbol of Ferrari, which celebrates its 50th anniversary this year, graces the wood-rimmed steering wheel of a 1957 250 Testa Rossa (also shown on pp. 58-59) lovingly restored by Charles Betz and Fred Peters.
PHOTOGRAPH BY ENRICO FERORELLI

18 Letters to the Editor

156 Additional Sources

157 Picture Credits

158 Smithsonian Study Tours and Seminars

16 Smithsonian Perspectives
Joseph Henry's Legacy
BY SECRETARY I. MICHAEL HEYMAN

22 Phenomena, Comment & Notes
A Creek Defies the Odds
BY EDWIN KIESTER, JR.

29 Around the Mall & Beyond
Geology That's *Alive*
BY MICHAEL KERNAN

32 The Object at Hand
"Little Brother of War"
BY ADELE CONOVER

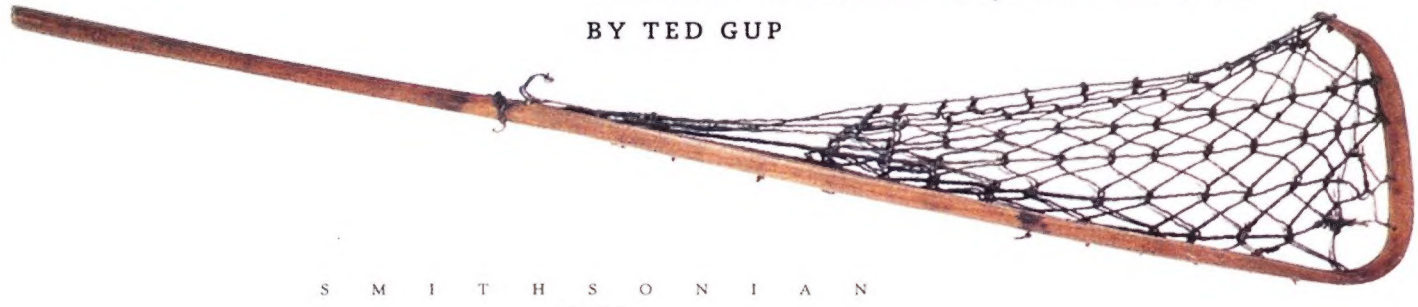
36 Smithsonian Highlights
Time Out—Sports in Art
Highlights Calendar starts on page 38

152 Book Reviews
Lady's Choice, compiled and edited by Barbara Love and Frances Love Froidevaux
Homesteading by Percy Wollaston
House of Houses by Pat Mora

160 The Last Page
If a Mustache Becomes You, Don't Cut It Off
BY TED GUP

36

32



RETIREMENT PLANNING

Retirement. Now it's *your* turn.

No more boss, no more schedule, no more meetings. Just time. Time for your hobbies, the grandkids, and the backyard hammock. Or, maybe that romantic trip to Venice you've always dreamed about. But dreams remain only dreams without a solid plan for retirement income. You need a retirement partner like Transamerica to help turn your dreams into reality. We have a full range of annuity, life and long term care insurance products,

as well as mutual funds and 401(k) plans, to help you prepare for the future. Talk to your Transamerica representative or call us toll-free to get a copy of our free booklet, "Making Retirement Dreams Come True." You can also visit us online at www.transamerica.com.

TRANSAMERICA

THE PEOPLE IN THE PYRAMID ARE WORKING FOR YOU℠

Call 1-800-945-8490 ext. 272

LIFE INSURANCE • ASSET MANAGEMENT • LENDING • LEASING

ADT 5035

Car hits tree. Or tree hits car. Airbags inflate. OnStar Center is alerted. Computer map pinpoints location. Adviser calls back, gets no answer. Adviser calls nearest emergency service provider. Yes, someone will hear you. 24 hours a day, 7 days a week. Even if you can't call, we'll hear you. We'll hear you in other ways, too. If you're lost, we'll direct you.

If your car is stolen, we can track it. If you're locked out, we can unlock. It's a service called OnStar. It's available on nearly 2 million new GM vehicles. And it gives you more peace of mind. Because it's a jungle out there. Even when it's only a forest.
Call 1-888-ONSTAR-7 or visit our website at www.onstar.com.

ONSTAR

DVD
DVD
Movie
Rebate
Purchase a Panasonic DVD Player and we will reimburse you up to $50 towards your choice of DVD movies. Buy the DVD-A100 and we'll reimburse you for the purchase price of one DVD movie title, up to $25. Buy the DVD-A300 and we'll reimburse you for two movies, up to $50. There are hundreds of movies already available, like *The Paper, The Shadow, Babe,* and *Beethoven.* We know you'll enjoy them. And getting a rebate will let you enjoy them even more.
Time is limited. All purchases must be made by 1/31/98. See in-store coupon at participating Panasonic dealers for details.
Panasonic
just slightly ahead of our time

Smithsonian

SECRETARY OF THE SMITHSONIAN INSTITUTION
I. Michael Heyman

EDITOR
Don Moser

BOARD OF EDITORS
Constance A. Bond
Kathleen M. Burke
Jim Doherty
Timothy Foote
Marlane A. Liddell
Sally Scott Maran
Edgar Rich, *Pictures*
John P. Wiley, Jr.

ASSOCIATE EDITORS
Diane M. Bolz
Suzanne Crawford
Bruce Hathaway
Lucinda Moore
Beth Py-Lieberman
Ruth Ravenel
Bonnie Stutski, *Pictures*

ASSISTANT EDITORS
Caneel Cotton, *Pictures*
Elizabeth J. Erskine
Marian Smith Holmes
Valerie Jablow
Taehee Kim
Karen Larkins
Alison C. McLean
Minna Morse

ARTICLES ASSISTANT
Angela M. Pleasants

RESEARCH ASSISTANTS
Karla A. Henry
Carolyn McGhee

ASSISTANT TO THE EDITOR
Lyn Garrity

CONTRIBUTING EDITORS
Edwards Park
Bennett Schiff
Nancy Seaman

SMITHSONIAN INSTITUTION ◆ BOARD OF REGENTS

EX OFFICIO
Chief Justice of the United States, William H. Rehnquist, *Chancellor*
Vice President of the United States, Albert Gore, Jr

APPOINTED BY THE PRESIDENT OF THE SENATE
Hon. Thad Cochran
Hon. Bill Frist
Hon. Daniel P. Moynihan

APPOINTED BY THE SPEAKER OF THE HOUSE
Hon. Sam Johnson
Hon. Bob Livingston
Hon. Esteban E. Torres

APPOINTED BY JOINT RESOLUTION OF CONGRESS
Hon. Howard H. Baker, Jr.
Hon. Barber B. Conable, Jr.
Ms. Anne d'Harnoncourt
Mr. Louis V. Gerstner, Jr
Dr. Hanna H. Gray
Dr. Manuel L. Ibáñez
Dr. Homer A. Neal
Mr. Frank A. Shrontz
Mr. Wesley S. Williams, Jr

SMITHSONIAN NATIONAL BOARD

Mrs. Jean Bronson Mahoney, *Chair*
Hon. Frank A. Weil, *Vice Chair*

Sir Valentine Adby
Hon. Max N. Berry
Mrs. Laura Lee Blanton
Mrs. John M. Bradley
Mr. Stephen F. Brauer
Hon. Henry E. Catto
Mr. Peter R. Coneway
Mr. Thomas E. Congdon
Ms. Allison Stacey Cowles
Mr. Frank Arthur Daniels, Jr
Mr. Archie W. Dunham
Mrs. Patricia Frost
Ms. Nely Galan
Mr. Bert Getz
Mr. Paul Hertelendy
Mrs. Ruth S. Holmberg
Mr. Roger Horchow
Mr. Robert L. James
Mrs. Donald W. Jeffries
Mrs. James Kinnear
Mrs. Marie L. Knowles
Hon. Marc Leland
Mr. Donald G. Lubin
Ms. Elizabeth S. MacMillan
Mrs. John W. Madigan
Mr. Frank N. Magid
Mrs. John F. Mars
Mr. Michael P. McBride
Mrs. Nan Tucker McEvoy
Mr. Kenneth B. Miller
Hon. Norman Y. Mineta
Mr. Thomas D. Mullins
Mr. Rupert Murdoch
Mr. John N. Nordstrom
Mrs. Joan Noto
Mrs. Frank Piasecki
Mr. Heinz C. Prechter
Mrs. Charles H. Price
Baron Eric de Rothschild
Mr. A. R. Sanchez
Mr. David M. Silfen
Hon. Alan K. Simpson
Ms. Kathy Daubert Smith
Mr. Kenneth L. Smith
Mr. Kelso F. Sutton
Mr. Jeffrey N. Watanabe
Mrs. Nancy Brown Wellin
Mr. Anthony Welters
Mr. Daniel W. Yohannes

HONORARY MEMBERS
Mr. Robert McC. Adams
Mr. William S. Anderson
Mr. Richard P. Cooley
Mr. Joseph F. Cullman III
Mr. Charles D. Dickey, Jr.
Mr. Alfred C. Glassell, Jr.
Mr. W. L. Hadley Griffin
Hon. William A. Hewitt
Hon. George C. McGhee
Justice Sandra D. O'Connor
Mr. S. Dillon Ripley
Mr. Francis C. Rooney, Jr.
Mr. Wilbur L. Ross, Jr
Mr. Lloyd G. Schermer
Mrs. Gay F. Wray

PANASONIC BRINGS YOU DVD. IT WILL DO FOR MOVIES WHAT THE CD DID FOR MUSIC.

Remember the first time you heard a CD? You didn't just hear the difference, you felt it. That's what Panasonic DVD will do for movies.

A DIGITAL PICTURE THAT'S TWICE AS SHARP. You know what most rental movies look like. Now imagine one that's twice as sharp. That's the difference DVD can make. DVD is capable of 500 lines of horizontal resolution,* more than twice that of the industry standard for most rental movies.

5.1 CHANNEL DIGITAL SURROUND SOUND. You can tell you're watching a movie on DVD with your eyes closed. Its Dolby** Digital (AC-3)† surround sound has 6 channels, including one for a subwoofer, for theater-like sound at home.

MOVIES ARE JUST THE BEGINNING. DVD is more than just the ultimate entertainment machine playing movies and music CDs. One DVD disc can hold the equivalent of 11,500 floppy discs. That means for computers, video games and business the possibilities are endless. And that's just the beginning. For more information call toll free 1-888 PANADVD. For an informative fax call 1-888-329-4872. Or see us on the web at www.panasonic.com. Once you know all that DVD can do, there's no looking back.

DVD

Made possible by

Panasonic

just slightly ahead of our time®

* Depending on tv monitor and software content.
** With Dolby Digital ready equipment.
† Dolby Digital (AC-3) is a registered trademark of Dolby Laboratories Licensing Corp.

372N Liquid Silver
Necklace $88
30" long, 30 Strands
Sterling Silver Heishi
(In 12K Liquid
Gold $118)

254E Liquid Silver
Earrings $18
In 12K Liquid Gold $24
(Clipped or Pierced)

349B Liquid Silver
Bracelet $28
(20 Strand, 7" Long,
Not Pictured)
(In 12K Liquid Gold $42)

**The Set
for only $96
(In 12K Liquid Gold $138)**

The Set Includes A
Complimentary Liquid Silver,
or 12K Liquid Gold,
7 Inch Bracelet !

Flowing Silver

A sterling inspiration brought
to life from the precious
waters that flow in the
springs and falls of our
Southwestern Deserts.
A simple and elegant
set that accents
any attire.

Send $3
for catalog

MARY LAURA'S
SOUTHWESTERN ARTS
To Order Call Toll Free 1-800-662-4848
Visa • Mastercard • American Express • Diner's Club
Intl. (505) 839-2256 • Toll Free FAX 1-800-468-3236
$3.00 Shipping & Handling
900 Old Coors Road, S.W., Dept. SM
Albuquerque, New Mexico 87121-3308 U.S.A.

Smithsonian

EDITORIAL & PUBLISHING OFFICES:
900 Jefferson Drive, SW
Rm 1301, MRC 406
Washington, D.C. 20560

INTERNET ADDRESS:
www.smithsonianmag.si.edu

SUBSCRIPTIONS: 1-800-766-2149
[outside of U.S., call 1-904-445-4662]

PUBLISHER
Ronald C. Walker
Michelle A. McMahon,
Executive Assistant

ADMINISTRATION
Carey O. Randall,
Associate Publisher
Valerie Martin,
Business Manager

CIRCULATION
Liberta Abbondante, *Director*
Carolyn Topak,
Marketing Director
Elizabeth Hopkins,
Planning Director
Andrea Sole, *Fulfillment Director*

PRODUCTION
E. Cherry Doyle, *Director*
Greg Williams, *Quality Manager*
Briggs S. Cunningham, *Editorial*
Marilyn S. Greene, *Advertising*

ADVERTISING
David C. Cator, *Director*
Hamlin M. Gilbert, Jr.
Advertising Services Director

NEW YORK 420 Lexington Avenue
Suite 1945, New York, NY 10170-0084
212-490-2510 ◆ fax: 212-986-4259

ATLANTA Brown & Company
770-998-2889 ◆ fax: 770-552-8250

CHICAGO Warden, Kelley, Allen & Opfer
312-236-2757 ◆ fax: 312-236-7802

DETROIT Hartle & Heth Inc.
248-642-7273 ◆ fax: 248-642-1321

LOS ANGELES
Charles E. Schmuck & Associates
310-478-3833 ◆ fax: 310-478-1633

PHILADELPHIA
William H. Dixon Associates
610-696-2807 ◆ fax: 610-692-5177

SAN FRANCISCO
Charles E. Schmuck & Associates
415-986-1945 ◆ fax: 415-986-1159

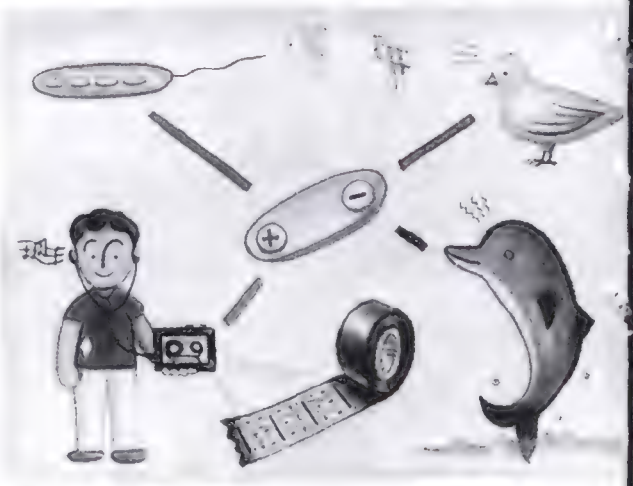
TOKYO
International Communications Inc
81-33-593-1441 ◆ fax: 81-33-580-0414

MEXICO
Towmar Representaciones Profesionales
525-395-5888 ◆ fax: 525-395-4985

FOUNDERS
S. Dillon Ripley
Edward K. Thompson

PUBLISHER EMERITUS
Joseph J. Bonsignore

The Wonder of Iron-



Iron Particles Store Information

The ability of ferromagnetic substances to rememb directions of a magnetic field mean they can be use to store information. The stronger the coercive forc the more strongly a material retains its magnetism. stronger coercive force allows information to be store at higher densities. Ferromagnetic substances, iro iron alloys, and iron compounds, are divided in smaller regions known as magnetic domains wi each domain having a different orientation.

Fine particles of a ferromagnetic substance, below certain size, will have only a single magnetic domai These particles are called single-domain particle Some kind of bacteria, dolphins, and homing pigeo have single-domain particles within their bodie which help them sense direction. Man uses the particles by coating magnetic disks, magnetic tap magnetic cards, and other magnetic memory devic with needle-shaped single-domain particles.

Magnetic storage was first used in 1898 by th Danish scientist V. Poulsen to make a magnetic sou recorder. The recording medium was originally ste wires or steel belts running at several meters per se ond, but nowadays, we generally used needle-shape particles of iron oxide (γ Fe_2O_3) or iron alloys (Fe-C Ni).

Since modern iron and steel production began in th mid-19th century, large structures of iron have played major part in supporting our industry and cultur Now it is the turn of tiny particles of iron to suppo society, holding the vast amounts of information v produce and use.

NIPPON STEEL
Nippon Steel Corporation/Public Relations Center
6-3, Otemachi 2-chome, Chiyoda-ku, Tokyo 100-71, Japan
Tel: 813 3242 4111/Fax: 813 3275 5607
http://www.nsc.co.jp

The Elegance and Magic of Christmas

FINE GLASS ORNAMENTS BY *Christopher Radko* WHEN ONLY THE BEST WILL DO.

Available at better gift stores nationwide including Neiman Marcus, Marshall Field's, Saks Fifth Avenue, Bloomingdale's, Lord & Taylor, Dayton's, Hudson's, and Bergdorf Goodman. For additional information, please call 1-800-RADKO-75.

97 Christopher Radko for Starad, Inc.

SMITHSONIAN PERSPECTIVES

Joseph Henry's Legacy

A MAN OF SCIENCE AND COMPROMISE, THE SMITHSONIAN'S FIRST SECRETARY LAID THE FOUNDATION FOR SUCCESS

A TEENAGER IN ALBANY, NEW YORK, FACED A DIFFICULT decision. Should he pursue a career on the stage, a career for which he had already demonstrated the requisite talent as an amateur? Or should he study nature, yielding to his burning desire, as he later recollected, "to devote my life to the acquisition of knowledge"? Joseph Henry (1797-1878) chose the laboratory over the theater, and we should be grateful for his decision. This month we commemorate the bicentennial of the birth of that perplexed adolescent who became one of the most important American scientists of the mid-19th century, a renowned teacher of physics at the Albany Academy from 1826 to 1832 and the College of New Jersey (now Princeton University) from 1832 to 1846, and the first Secretary of the Smithsonian Institution, from 1846 to 1878. To mark his 200th anniversary, an exhibition and other events are scheduled to take place in the Albany area. And with the cooperation of the U.S. Postal Service, the Smithsonian's National Postal Museum has designed a special commemorative postmark for the occasion.

Henry's fame rests on his pioneering work on the nature of electromagnetism. His discoveries in electromagnetic induction helped bring about the invention of the telegraph, the electric motor and the telephone. He was a maestro of the laboratory, skilled in improving apparatuses and devising experiments. A later generation of physicists honored him by naming a unit of electricity after him.

Joseph Henry became Secretary most reluctantly, unhappy to have to leave academia. He later wrote his son, "I did not accept the office on account of emolument or fame. . . . I accepted the office with the hope of doing good and because I was to use a political phrase the only available candidate."

He brought to Washington a mixture of fervor and pragmatism that served him well in his difficult job of creating an institution without precedent in this country. Reasonable compromise was the key to his success. The legislation establishing the Smithsonian was a compromise among several competing interests. Henry had to develop a program that fostered the "increase and diffusion of knowledge"—a program that satisfied both his interpretation of James Smithson's will and the demands of Congress. He had to find ways for the Smithsonian to serve the local community, the nation as a whole and the world.

Underpinning all of Henry's decisions was his determination to make the Smithsonian a patron of research in the fundamental principles of nature. Without basic research and researchers, he argued, there could be no technological advances, no proper public understanding of science. He drew these conclusions from his own experiences, especially from giving advice and support to Samuel F. B. Morse at crucial moments in the development of the telegraph (and later, while Secretary, to Alexander Graham Bell during the invention of the telephone) and from successfully integrating research into the teaching of science to liberal arts students. For research and its findings to have the greatest impact, Henry believed, they had to be available to a broad audience.

His paramount concern with research caused him to mount fierce opposition to the proposal to construct the Smithsonian's first edifice to house collections—the "Castle," as it came to be known. For many years, he maintained that funding "bricks and mortar" projects would deplete the Institution's resources, thereby threatening its ability to pursue original research. Eventually, however, Henry yielded on the controversial issue of a national museum when he realized that the proposal enjoyed strong support from the Board of Regents, Congress, local leaders and even his fellow scientists. Contemporaries acknowledged that "he could deal with men as well as with the forces of nature."

As the Secretary's adroitness for compromise developed, he successfully steered the Institution through many contentious and divisive issues during its nascent years, setting the course for the great complex of museums and research facilities we have today.

Joseph Henry understood that as research frontiers shifted and the needs of the nation and the world were transformed, the Smithsonian would have to take on new responsibilities. In commemorating his vision and work, we acknowledge the extraordinary impact an individual can have on the history of an institution and on a people.

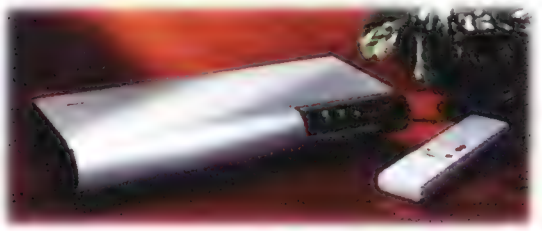
I. MICHAEL HEYMAN, SECRETARY

As you begin your search for the ideal home theater audio system, ask yourself what's important:

Is it the size of the equipment?

Or is it the size of the sound?

It has long been assumed that bigger equipment means better sound. Not anymore. Bose® Lifestyle® systems allow you to enjoy better sound with less clutter, less equipment and less complication.



• A single, 2⅝" high music center replaces an entire rack of electronics and includes a built-in CD player and AM/FM tuner. • Tiny Jewel Cube® speakers are about the size of a computer mouse. And hidden away out of view is the Acoustimass® module for purer, more natural bass. Your favorite music, movies and sports programs will come to life in a way you simply cannot imagine. • *Home Theater Technology* summed it up by saying, "Everything is included and carefully thought out.... The performance is awesome."* • Please call for your complimentary guide to our Lifestyle® music and home theater systems, and for Bose dealers near you. Then compare the size of Bose sound to the sound of the biggest equipment you can find.

BOSE®
Better sound through research®

1-800-444-BOSE Ext.525 www.bose.com

© 1997 Bose Corporation JN98307G *From a review of the Lifestyle® 12 home theater system

LETTERS TO THE EDITOR

In the July issue, we asked readers to comment on SMITHSONIAN's new design, and we received a large volume of mail in response. Much of it was positive, but the common thread among negative letters was that people found the new typeface harder to read. We paid attention. Last month we began using larger type for the body of the text.

The Editors

PHENOMENA, COMMENT & NOTES

I READ WITH INTEREST THE OCTOBER column by John P. Wiley, Jr., in which he offers his definition of an intellectual. I agree with him that the term has become pejorative. In my mind, an intellectual is someone who delights in the exercise and perfection of his or her mental *and* creative abilities. There is no reason why someone cannot be both a scientist and an artist. Sadly, there are those who are neither—and are proud of it. "All men are created equal" before the law. By redefining "equal," this democratic tenet has come to mean that no one is better than anyone else. Too bad, then, that those with lesser talents try to feel equal or superior by deriding the intellectual, whether the field is science or art.

Joel Brumlik
Bowling Green, Ohio

THE DECLINE IN NONUNIVERSITY-based scholarship lies with the decline of the reading public. The audience who would read such intellectual work chooses instead to vegetate while watching mindless sitcoms and professional sports. Furthermore, our materialistic culture places little value on those who put ideas before the dollar. Believe me, in Texas the liberal arts scholar who believes himself an intellectual is respected far less than the geeky Dow scientist. At least the scientist can earn a buck.

Richard Neal Green, Jr.
Hewitt, Texas

AS MARK TWAIN WROTE IN *PUDD'N-head Wilson*, "Training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education."

William Bee
Austin, Texas

LOBSTERING

DON'T TELL ANYBODY, BUT JIM DOherty may be a poet at heart. This is evident in his article "Claws," about lobstering. Read the last six paragraphs in particular and see if I'm not right. Perhaps, in this instance, it was the Down East Maine atmosphere and environment that brought it out, but I have a feeling it's always there. Doherty is like other good writers whose poetry comes through when they truly enjoy what they're doing.

James Stayton
Eureka, California

THE MAINE LOBSTERMAN SHOWN ON page 52 is Ed Irvin of Martinsville.

George W. Fowler
Union, Maine

THOMAS MORAN

DONALD DALE JACKSON WROTE A nice story about Thomas Moran, who was indeed a romantic. In 1890, an old man in Venice sold the artist a gondola for $1,200. Other sources told Moran that the poet Robert Browning had given the gondola, one of several he owned, to the old man. Moran and Mary paddled it around their home waters on Long Island. Eventually the boat was given to the Mariners' Museum in Newport News, Virginia.

Frank J. Lepreau, Jr.
Westport, Massachusetts

KEY BROTHERS

THE STORY BY EDWARDS PARK ABOUT the flight of *Ole Miss*, which established the National Aeronautic Association world record, was very nostalgic for me. You see, I was the refueling pilot for each of the three efforts, two unsuccessful in 1934 and the successful one in 1935. I commend Park for his accurate depiction of the events. I cannot be contradicted as I am the sole survivor of the flying crew. My age is 87.

James H. Keeton
Magnolia Springs, Alabama

IT'S A GOOD STORY, WELL TOLD. TO think of making engine repairs while perched on a catwalk outside the plane! The Keys demonstrated a special kind of courage and drive to get the job done. Adventure now seems to be focused on cyberspace—heavy on intellect, but is it daring?

Robert E. Gilka
Arlington, Virginia

DAVE STEPHENSON, THE MAN WHO built the catwalk on *Ole Miss*, is my father. He was also involved with building and installing the gas tank and helping A. D. Hunter with his invention of the automatic cutoff valve. They worked together at Soule Steam Feed Works for many years.

None of the men who worked on *Ole Miss* was ever paid, but Al and Fred Key gave flying lessons to those who wanted them. I was 8 years old at the time of the successful endurance flight, and my siblings and I went up many times in a third plane to watch the refueling.

Daddy, who is now 93, still lives in Meridian and drives his own car. He is the lone survivor of that 1935 ground crew.

Elinor Stephenson Ross
Shepherdstown, West Virginia

YOUR STATEMENT THAT "NO PLANE kept aloft by refueling has ever beaten the Keys' record" is inaccurate. On

STATE FARM INSURANCE

State Farm Good Neighbor Award

Seated left to right: Lorelei Jones, Brenda Jones, Darcy Swope, Laurie Poole. Standing left to right: Beverly Ann Williams, Russell Hoffman, Christine Vita Golik, Rachel Ely, Julie Gawel, Anne Godsey, Diana Mand.

The Results These Art Teachers Get Are Anything But Sketchy.

To these teachers, art is more than just drawing pictures. It's drawing conclusions. And, using a variety of mediums, they've helped their students harness their creative talents to address important social issues from race relations to recycling. For showing them that art is as much about young minds as it is about old masters, during the past year State Farm is proud to have presented our Good Neighbor Award to each of these remarkable educators.

STATE FARM INSURANCE COMPANIES
Home Offices: Bloomington, Illinois • www.statefarm.com
The Good Neighbor Award was developed in cooperation with the National Art Education Association.

December 4, 1958, Robert Timm and John Cook took off from McCarran Airfield in Las Vegas, Nevada, in a Cessna 172 and remained airborne for 64 days, 22 hours, 19 minutes and 5 seconds. They landed at McCarran on February 7, 1959.

Jan Mara
Phoenix, Arizona

DUELING

BARBARA HOLLAND GAVE ONE VERsion of Abraham Lincoln's brush with the Code Duello, but I favor another oft-told story. When James Shields first challenged Lincoln to a duel, the latter selected as his choice of weapons "cow dung at five paces."

The two men continued to be political opponents, but there apparently was no serious enmity between them. Shields had fought gallantly and had been wounded in the Mexican War, and in 1862, President Lincoln appointed Shields to the rank of brigadier general of volunteers. He held this post when his division fought and routed fabled Confederate general Stonewall Jackson at Kernstown in the Shenandoah Valley.

Meyer L. Block
East Northport, New York

IN HER FUNNY, INFORMATIVE ARTICLE, Holland wrote that the 1852 duel between California's secretary of state and the editor of the *Alta California* was over whether or not to send aid to the snowbound Donner Party. That tragedy occurred during the winter of 1846-47 while the territory was still under Mexican authority. California did not become a state until 1850.

Naida Gipson
Tacoma, Washington

The duel was over sending rescuers to the aid of another ill-fated party. Ed.

YOUR ARTICLE MENTIONED THAT Queen Elizabeth I of England ended the practice of judicial trial by combat around 1570. It was not formally abolished, however, until the disposition of the case *Ashford* v. *Thornton*.

In the early hours of May 27, 1817, spinster Mary Ashford was found drowned in a pit of water. Abraham Thornton stood trial for the murder, which occurred following his "carnal knowledge" of her. Although the facts against Thornton were overwhelming, the jury acquitted him.

With help from the outraged public, Mary's brother William "instituted an appeal of murder" in November 1817, asking that the case be retried. Thornton claimed the ancient, obsolete and legal right of demanding trial by combat in lieu of a jury trial. Ashford declined Thornton's wager of battle, and Thornton went free in April 1818.

On June 22, 1819, Parliament enacted into law that all appeals by wager of battle "of treason, murder, felony, or other offences shall cease."

Christopher J. Dyas
Berkeley, California

THE OBJECT AT HAND

LONG AGO I HAD THE PRIVILEGE OF attending Professor E. G. Boring's lectures in the history of psychology at Harvard, which included discourses on phrenology. He made many of the same points as Minna Morse did in her excellent column "Facing a Bumpy History." Boring emphasized that the main contribution of phrenology to contemporary psychology was that it focused attention on the brain, not the heart, liver, gallbladder or spleen, as the seat of all thought and emotion. This hypothesis was not verifiable, of course, until medicine advanced to the point where a head wound was not invariably fatal, which Boring suggested occurred around the time of the Franco-Prussian War. By then, the mental impairments of veterans who had survived head wounds could be studied.

Phineas Gage, who was discussed in the column, was apparently an anomaly. The tamping rod that penetrated his skull during the railroad accident was heated red-hot by the premature quarry explosion and cauterized the wound as it entered.

Lawrence R. Zeitlin
Professor Emeritus of Psychology
City University of New York

THE COLUMN ABOUT PHRENOLOGY was interesting, but Edgar Allan Poe appears to have joined the mortal world shortly after leaving it. Since Poe died in 1849, he could not have employed "cranial descriptions in an 1850 series of sketches of New York literary figures."

William Last
Boston, Massachusetts

Poe's sketches were published, not written, in 1850. Ed.

PHRENOLOGY LIVED ON LONGER THAN your article implies. My mother took teacher-training classes in the 1920s and was taught phrenology in relation to educating and giving vocational guidance to children. When neighborhood playmates came to visit, she would always point out elements such as, "She has extra flesh over her eyelids. That indicates musical talent." Of a boy I knew, she commented, "His head is flat in the back so he needs to become a railroad engineer." When she looked at the portraits of people in my college yearbook whom she had never met, she correctly picked out the ones who were going into teaching and the ones who were merely "party animals."

Joyce Ogden
Olympia, Washington

WRITE TO SMITHSONIAN

Letters for consideration in this column must include your full name and daytime telephone number. Letters may be edited for clarity and length. Post mail to Letters Editor, SMITHSONIAN, 900 Jefferson Drive, MRC 406, Washington, DC 20560.

INTRIGUED? A QUICK GLANCE. YOU IMMEDIATELY NOTICE THE CATLIKE EYES, THE MUSCULAR LINES. FURTHER INVESTIGATION REVEALS A SLEEK INTERIOR DESIGN, CONTOURED SEATS. IF YOU CHOOSE, LEATHER TRIM AND A PREMIUM BOSE® AUDIO SYSTEM ARE AVAILABLE. THE HOOD HIDES A 195HP V6. THE HIGH PERFORMANCE SUSPENSION SYSTEM LIES WAITING FOR THE NEXT CURVE. YOU STARE, KNOWING THAT ONLY WHEN YOU DRIVE IT WILL ALL ITS SECRETS BE TOLD.

INTRIGUE™

A SOPHISTICATED TWIST ON A SPORTS SEDAN

GM © 1997 GM Corp. All rights reserved. Buckle Up, America!

Oldsmobile

www.intriguecar.com

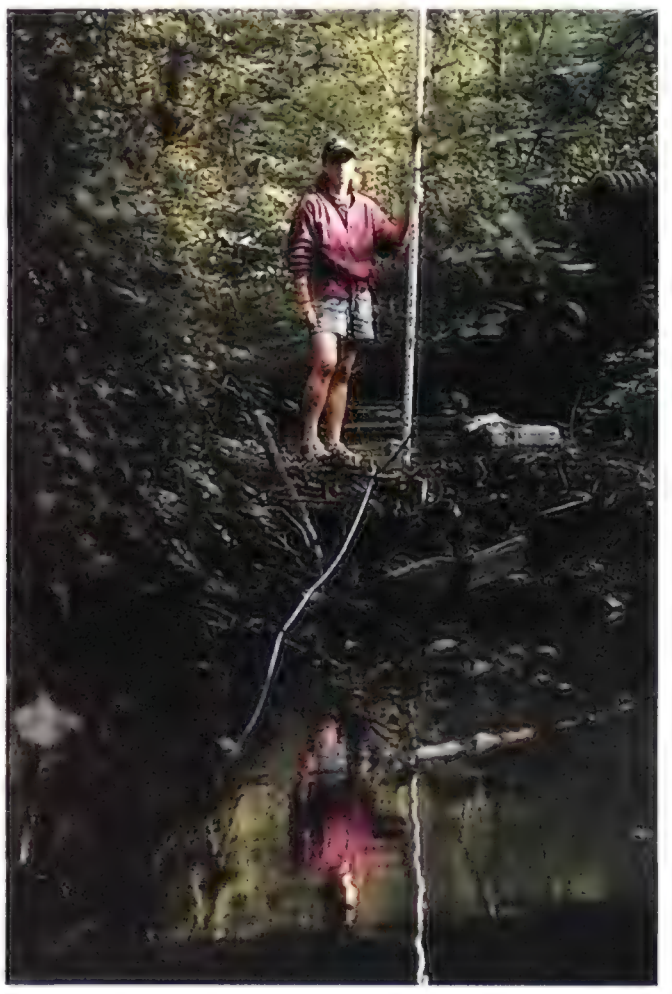
A Creek Defies the Odds

THANKS TO 300 VOLUNTEERS, STEELHEAD ARE BACK AGAIN, DESPITE HIGHWAYS, OFFICES AND A CAMPUS

BY EDWIN KIESTER, JR.

"THERE! SEE HIM! RIGHT THERE!" JIM JOHNSON IS POINTing to a riffle in a quick-flowing stream tiny enough for us to step across. All I see is what seems to be a stick, perhaps six inches long, in the rippling water. Suddenly, the "stick" flicks its tail and darts away. "See! A steelhead! That's what we've been able to do. We've brought back the steelhead to their natural waters."

With the clear, cold stream and the acrobatic game fish, we might be somewhere in a remote mountain setting. In fact, not far above us roar the trucks and minivans of a six-lane Interstate, and if it were not for the intervening trees we could see the nearby Hoover Tower of Stanford University and the office buildings of Silicon Valley. Johnson, an antiquities restorer by trade, is a part-time streamkeeper for this urbanized little rivulet and other tributaries of San Francisquito Creek, whose 43-square-mile watershed rises near the notorious San Andreas Fault and eventually empties into San Francisco Bay. "We" are some 300 college students, Silicon Valley engineers, teachers, housewives and Stanford faculty dedicated to monitoring and restoring it to what it was in the more benign days when the Ohlone Indians inhabited these parts. Thanks to the volunteers, says Debbie Mytels of the San Francisquito Creek Watershed Project, which coordinates the restoration campaign, "we're seeing steelhead where they haven't been seen for a hundred years."



Roberta Bischel helps plot the deepest part of the stream channel during a period of low flow.

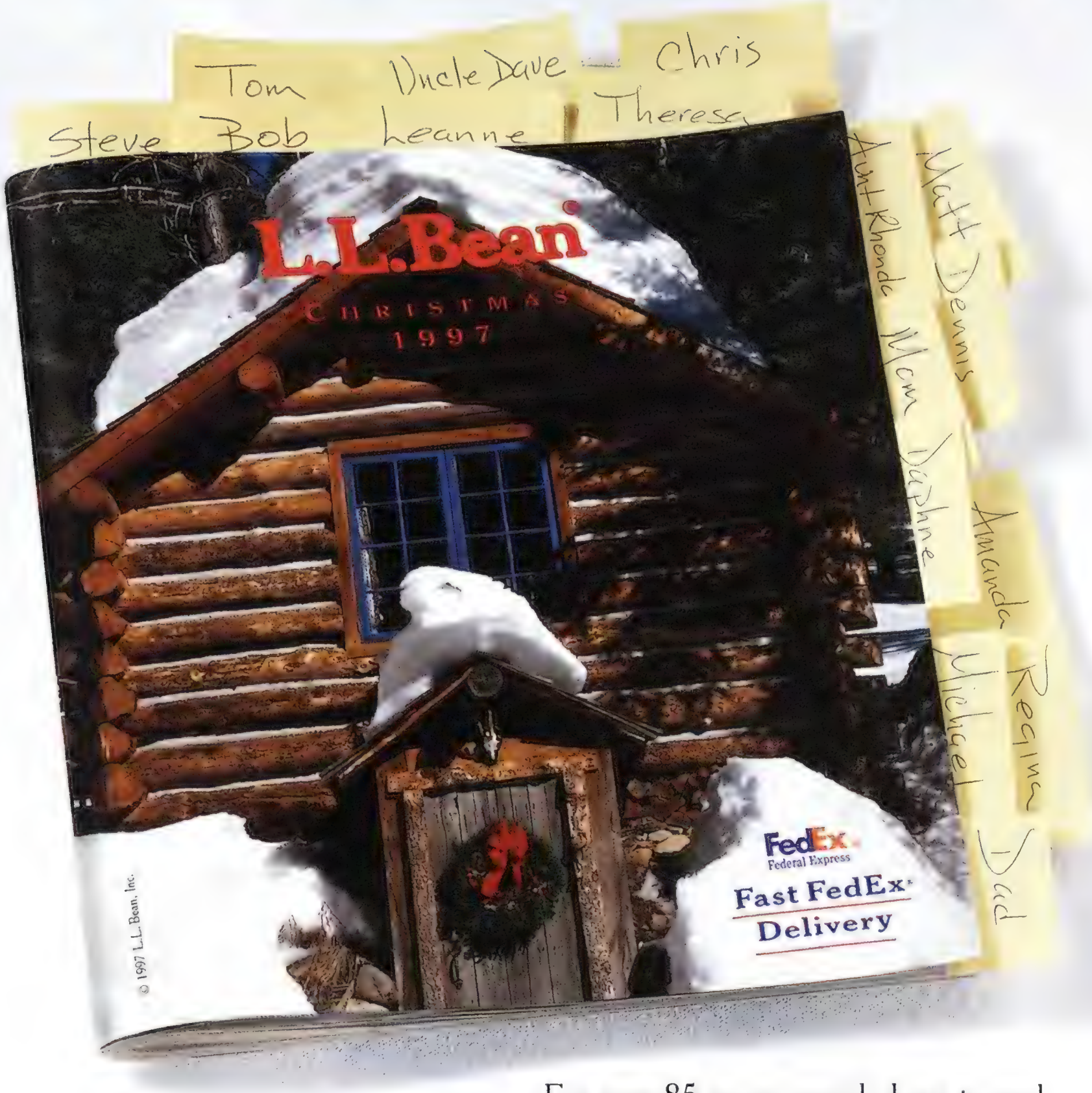
Wearing leaky boots and an inadequate supply of mosquito repellent, I spend a day with the volunteers. Five others and I have been detailed to Los Trancos Creek, a major tributary of the San Francisquito, to prepare a Thalweg profile. "A what?" I ask Ariane Bertrand, assistant director of the Coyote Creek Riparian Station in San Jose, California, which trains the volunteers and oversees their efforts. A Thalweg is a basic step in understanding the physical characteristics of a stream, Ariane explains. It charts the deepest part of a river or channel throughout its course so that later observers can detect changes, track them to their source and, possibly, correct them. For instance, upstream construction can cause silting downstream. Mud slides can alter the creek's course.

I stand in the stream holding a telescoping surveyor's rod, calibrated in tenths of a foot. Volunteer Roberta Bischel squints at me through the 20-power lens of a survey level mounted on a tripod. "I can't see anything but his fingers," she complains. I move the offending fingers. "Four point six-two," she calls out to Diana Brumbaugh, a San Francisco State University graduate student, who notes the number in her log.

The figure, when subtracted from the instrument height, Diana explains, represents the elevation of the streambed at that location in relation to a bench mark whose elevation is known. "What's the composition of the bed?" she asks me. I look down at my feet. Having been briefed on the differences among silt, sand, gravel, cobble and boulder, I vote for a combination of gravel and small cobble. Diana makes another entry, meanwhile noting where the stream banks have eroded and the type of surrounding vegetation.

"If someone comes back to this spot next year and finds silt instead of cobble, they'll know to look for a problem upstream," Ariane says. She beckons me to move the rod some five yards farther along. Satisfied with my new location, she gestures to Roberta, who squints through the eye-

L.L. Christmas Tradition



For over 85 years, people have turned to the L.L. Bean Christmas catalog to find the perfect holiday gift. From turtlenecks to toboggans, we're sure to have something for everyone on your list. All honestly priced, all 100% guaranteed. Just pick up the phone and give us a call—or shop with us on-line at www.llbean.com.

Call for your FREE catalog.

1-800-441-4897

L.L.Bean®

Casco Street, Freeport, ME 04033

Shop on-line at www.llbean.com

piece; Diana makes more notes. We move the rod again, and slog slowly upstream until, after three hours, we have charted some 100 yards of waterway.

Largely through the efforts of the Environmental Protection Agency (EPA) and the Izaak Walton League's "Save Our Streams" program, waterway restoration is being conducted all across the country. Much of it is carried out by schoolchildren.

Because of its Mediterranean climate, however, California differs from other areas. When the rainy season ends in April, many streams simply disappear, not to reappear until November. Even the San Francisquito, which alternately bubbles and roars during winter storms, by late spring percolates into a gravel bed about five miles from its mouth.

The San Francisquito was chosen in 1993 for a project in "citizen monitoring," partly financed by a $50,000 grant from the EPA. "We chose it," says Michael Rigney, watershed program director at the riparian station, "because of the huge challenge. The watershed covers every kind of territory: forests, agriculture, pastureland, horsey suburbs, close-in suburbs, a college campus, shopping centers, industrial areas. The watershed straddles two counties and five major cities, plus Stanford University, a city in itself. There are two water utilities, two flood-control agencies and a total of 16 jurisdictions. You couldn't ask for more of a challenge than that."

Yes, you could, Debbie Mytels points out. In the six-month dry season, the streambed becomes a haven for the homeless, resulting in sanitary waste and refuse polluting and clogging the streams. Each winter, swiftly rising runoffs from Pacific storms sweep through the camps, forcing residents to evacuate in a hurry and abandon their possessions. Mattresses, sleeping bags, tarpaulins, plastic bags and clothing are swept downstream.

The sewage problem has been partly solved by the opening of a shelter in a Veterans Administration hospital. But the volunteers face other challenges. Plant-loving homeowners have introduced foreign plant specimens of all varieties, and some of these intruders have run wild. One of the most hardy and tenacious is an ornamental from South Africa, German ivy, which climbs up tree trunks and breaks off the branches, dragging them to the ground and destroying the stream's shade cover. If too much shade cover is lost along the San Francisquito, water temperatures could rise to a degree hostile to steelhead and the entire stream community.

Jim Johnson and Debbie Mytels spearheaded the campaign to restore the San Francisquito.

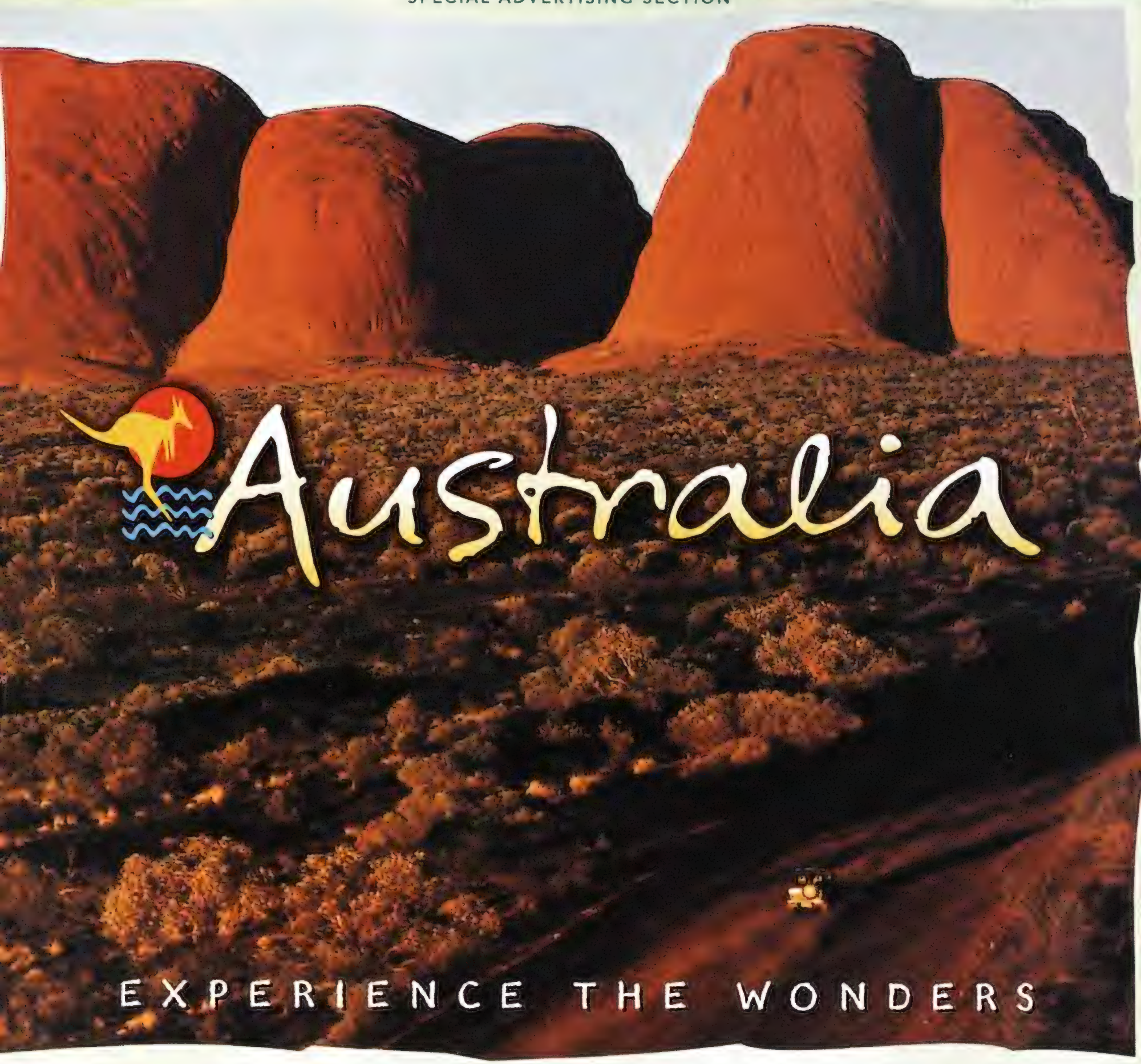
Home gardeners also lace their lawns and flower beds with fertilizers and pesticides, some of which inevitably run off into streams. They drain the chlorinated water from their swimming pools into the creeks, oblivious to the harmful effects. Upstream in the foothills, horse manure from riding stables ends up in the water.

Public education has been a major thrust of the restoration effort. The group has developed a manual of native plants to be distributed to property owners, along with instructions for uprooting the interlopers. Other literature has described more benign fertilizers.

Education, however, is only half the battle. Thus, on a balmy September Sunday, we volunteers converge again along the San Francisquito and its tributaries for a cleanup day. We bypass the inhabited homeless encampments, but zero in on debris elsewhere in the creekbed. A couple of strong Silicon Valley engineers equipped with ropes haul abandoned shopping carts up the steep banks. Other volunteers fill plastic bags with trash, being careful not to disturb natural obstacles like fallen tree branches that could serve as shelter for fish life.

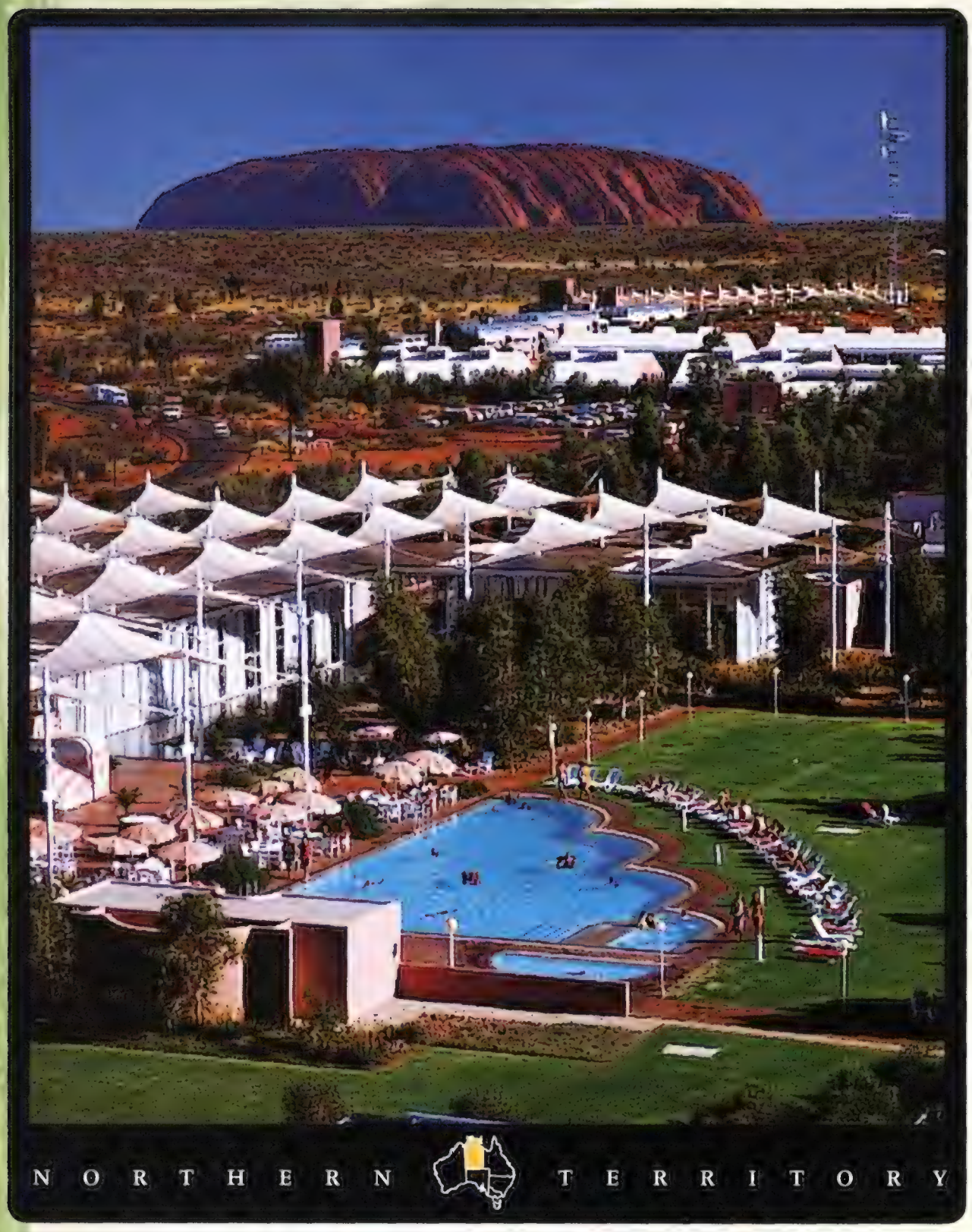
Our main target, however, is the ubiquitous German ivy on the banks, and it proves an implacable foe. Yanking the shallow-rooted stuff out of the ground isn't difficult, we find. The tough part is getting rid of it. You can't just pile it up and expect the plant to die; the ivy will quickly put down roots and thrive again. Vines and leaves have to be carefully crammed into garbage bags to be transported to the town sanitary landfill, and we are continually warned against dropping even a single branch, which could initiate a comeback.

There is still plenty of work ahead, Debbie Mytels tells me. Fish ladders on both Los Trancos and San Francisquito creeks are being restored. When the rains come again, trained volunteers will return to the streams to continue monitoring the changes in sediment, channel elevation and chemical content. "People drive over this creek every day and don't notice it," Debbie says. "We want to make it a community project, a part of local lives."



An adventure of unique discoveries; that's what you'll find down under in Oz. Here in these Australian territories, you can journey among natural wonders you won't find any place else in the world. Eleven World Heritage areas await you, including the world's largest living creature, the Great Barrier Reef, offering an unmatched experience to the wonders of the sea. Trek within the unspoiled wilderness of Tasmania's national parks, among crystalline lakes and rivers, rugged mountains, and prehistoric rainforests. Wonder at the bountiful indigenous plant and animal life that evolved over thousands of years in virtual isolation. And behold awe-inspiring Ayers Rock, the Olgas and the Red Centre of the Northern Territory, marvels of nature, steeped in ancient culture. But the most astounding discovery of all--visiting Australia is easy and a great value. For as little as US $2,999, you can enjoy a Natural Wonders Aussie Holiday that will give you a good view of everything Australia has to offer. And getting to Australia is much closer than you think. Flying time is about the same as most Asian, Mediterranean and Eastern European destinations. Come and say G'day to a whole new world of wonder.

Australian Natural Wonders Vacations from $2,999



Have a Look Outback

Perhaps the area that most personifies Australia is the rugged Outback. Red sand desert and wide open spaces supply an abundance of scenic natural wonders. The rich Aboriginal history only adds to the experience. Explore the Red Centre, the heart of the real Outback, Palm and Rainbow Valleys, Kings Canyon, the consummate Outback town of Alice Springs or "The Alice" as the locals call it, and famous landmarks such as the astounding Ayers Rock and the Olgas that simply seem to emerge from nowhere, jutting out of the desert expanse. Here's where you'll have the unique opportunity to go exploring by camel, since Australia hosts the largest population of free-roaming camels. Take a camel to your sunset dinner as you watch Ayers Rock change color from burnt orange to deep purple. Kings Canyon offers some of Australia's most picturesque bush walks (hiking). The many different vistas of the scenic MacDonnell Ranges provide a plethora of unique plant and animal life you wouldn't expect to find in such a sparse environment.

Wombats, Wallabies & Other Natural Wonders

If you seek fertile valleys, gourmet cuisine and award-winning wineries, then Adelaide is one place not to be missed. It also serves as an excellent gateway city to Kangaroo Island, Australia's best kept secret of natural wonders. Two-thirds of the island is a national park, filled to the brim with Australia's unusual native wildlife in their natural environment. Kangaroos, koalas high up in the gum trees, platypus and wallabies, and sea lions and fur seal colonies, so close you could almost touch them. Hire a vehicle and explore the island through four wheel drive, past the unique rock formations of the Remarkable Rocks, carved away by eons of wind and ocean spray, and Admirals Arch, a magnificent rock bridge.

A Wilderness Experience Like No Other

Just the opposite of the outback, the island territory of Tasmania features an abundance of national parks rich in pristine lakes and rivers, lush rain forests, miles of bushwalking trails, spectacular waterfalls, rugged mountain peaks and more. Explore Cradle Mountain/Lake St. Clair National Park, Franklin-Gordon Wild Rivers National Park, Freycinet National Park, to name a few. One region, designated as a World Heritage area is known as "The Tasmanian Wilderness." It covers about 20 percent of the island (1.38 hectares) and is one of only three temperate wilderness areas remaining in the Southern Hemisphere. Not only can you find rainforests dating back to prehistoric times, but superb wilderness lodges allow you to get close to nature in accommodations ranging from hardy to luxurious. Tasmania is a great destination for self-drive adventure. Stop along the way for cruises on the Franklin River, a hike on the Freycinet Peninsula, or simply relax in the shadows of Cradle Mountain Lodge.

Great Barrier Reef & Beyond

The Tropical North of Queensland is a natural paradise. Here is the only place in the world you'll find two World Heritage areas sitting side-by-side. Where the Great Barrier Reef ends, the Daintree National Park begins, making for an unsurpassed vacation opportunity. The Great Barrier Reef is the world's largest living thing, and is surround by sea life you won't find anywhere else. Stay at one of a number of outstanding resorts, cruise out to the reef for a day of snorkeling, or live aboard a scuba dive boat. Or take a four wheel drive safari through the Daintree National Park to the dense tropics of the rainforest, stay at one of the many astounding wilderness lodges and discover the unique plant and animal life.

Australia

EXPERIENCE THE NATURAL WONDERS OF AUSTRALIA

SWAIN AUSTRALIA TOURS

Explore the Wilderness...discover the Great Barrier Reef...marvel at Ayers Rock.

What better way to see and experience the natural wonders Australia offers than on a customized trip, arranged by Swain Australia Tours - a company with over 10 years experience in South Pacific Vacations. When you call, you'll speak to an expert on Australia; all of our staff are either from there or have lived "Downunder" and have traveled the country extensively.

We'll spend time getting to know your likes and dislikes; then let us customize the perfect vacation; from getting to know "True Blue" Aussies at a small country guesthouse to relaxing at five star luxury resorts, you can leave all the arrangements to us!

You'll soon discover that all of this first hand knowledge comes at no cost; we guarantee that you'll receive discounts on airfares, hotels and sightseeing. And as a Swain customer, you'll receive preferential treatment during your trip.

Southern Splendors

- Start your adventure the minute you board your plane in Los Angeles. You'll need to change planes in Sydney, but then it's off to the beautiful city of Adelaide, famous for the nearby wineries, gourmet cuisine and more. You'll stay overnight here at the Hyatt Adelaide.
- From Adelaide, you'll fly over to Kangaroo Island and spend two days exploring the wildlife of the national parks. Here's a perfect time to get up close and friendly with a few of the furry locals.
- Then, fly over to the island territory of Tasmania for a self-drive adventure. Here you'll discover many of the World Heritage natural wonders. You'll have a two-night stay at Cradle Mountain Lodge, two nights at Battery Point Manor in the harbor town of Hobart, and two nights at the Freycinet Lodge. Your six-day, mid-sized car rental (automatic transmission) is included, but be sure to take a few short bush walks (hikes) among some of the world's most astounding wilderness.
- Return to Launceston, Tasmania, where you'll fly to Melbourne before ending your Aussie adventure by returning to Los Angeles.

$2,999*

10 Days/9 Nights

Tour includes international and inter-Australia flights, accommodations, transfers and touring and car rental as listed.

Red Centre, Reef & Rainforest

- Leave from Los Angeles and head off to Alice Springs, or "The Alice." (You'll need to change planes.) Once there, you'll take a camel to a sunset dinner, stay overnight at the Plaza Hotel, then experience an early morning balloon ride over the outback.
- Fly to Ayers Rock for an awe-inspiring exploration of the natural wonders with a two-night stay at the Sails of the Desert. Here you'll have a sunset tour of the Olgas and Dunes, a morning walk around the base of the Rock, and go exploring on the Mt. Connor Outback Tour.
- Off to Cairns for a three-night stay at the unique Daintree Eco Lodge. Spend one of those days heading off to tour the astounding Great Barrier Reef and on another day, enjoy a gourmet champagne picnic. Then it's time to return home to the USA.

- **Add a 5-day/4-night stay in Australia's "Top End" for $1,299.** Fly to Darwin for a two-night stay at the Beaufort Hotel. Take off for a 3-day/2-night Kakadu and Katherine Air safari. Experience waterfalls, wetlands and wildlife.

$3,499*

7 Days/6 Nights

Tour includes international and inter-Australia flights, accommodations, transfers and touring as listed.

SWAIN AUSTRALIA TOURS®

800-227-9246

For more information on this tour and others, call us today at: 1-800-22 SWAIN or visit our web site: www.SwainAustralia.com

*Price is per person, double occupancy. Valid for LA departures April 1, 1998 through August 31, 1998. Ask for prices for other departures. US and Australian taxes of $76 not included. CST #2012413-40.

Geology That's *Alive*

VOLCANOLOGIST RICHARD FISKE LOVES FIELDWORK MOST OF ALL—WHEN HE'S ON THE JOB, THE EARTH MOVES

BY MICHAEL KERNAN

RICHARD FISKE IS INTERNATIONALLY known for his work with volcanoes; in certain circles in Japan he is a legend. For several years this Smithsonian geologist has been studying undersea explosive volcanoes with Japanese marine scientists. Japan is intensely concerned with the phenomenon, since it depends so much on the sea. There is also the possibility that an undersea volcano might erupt catastrophically, though that hasn't happened for thousands of years. To say the least, the tidal waves caused by such an eruption would be devastating for this island nation.

For much of this decade, Fiske has been at it, going down in a tiny Japanese submersible to explore recently active submarine craters. It's dark down there at 4,500 feet. The only lights are the sub's own beacons. The only sounds are the whirring of the video cameras and the rattle of things from the ocean floor being grabbed up by the sub's metal arm and dropped into a basket on its front.

"I've set two records," Fiske told me. "I was the tallest person ever to go into the submersible, and the oldest." He is 6 feet 1 and a bit, which is, of course, a lot more notable in Japan than here, and when he last went down, a year ago, he was 64, which is notable only when you understand that retirement at 60 is enforced in most Japanese universities. "I had to get in there like a wet noodle and scrunch up," Fiske remarked. "But I'd do it again in a minute."

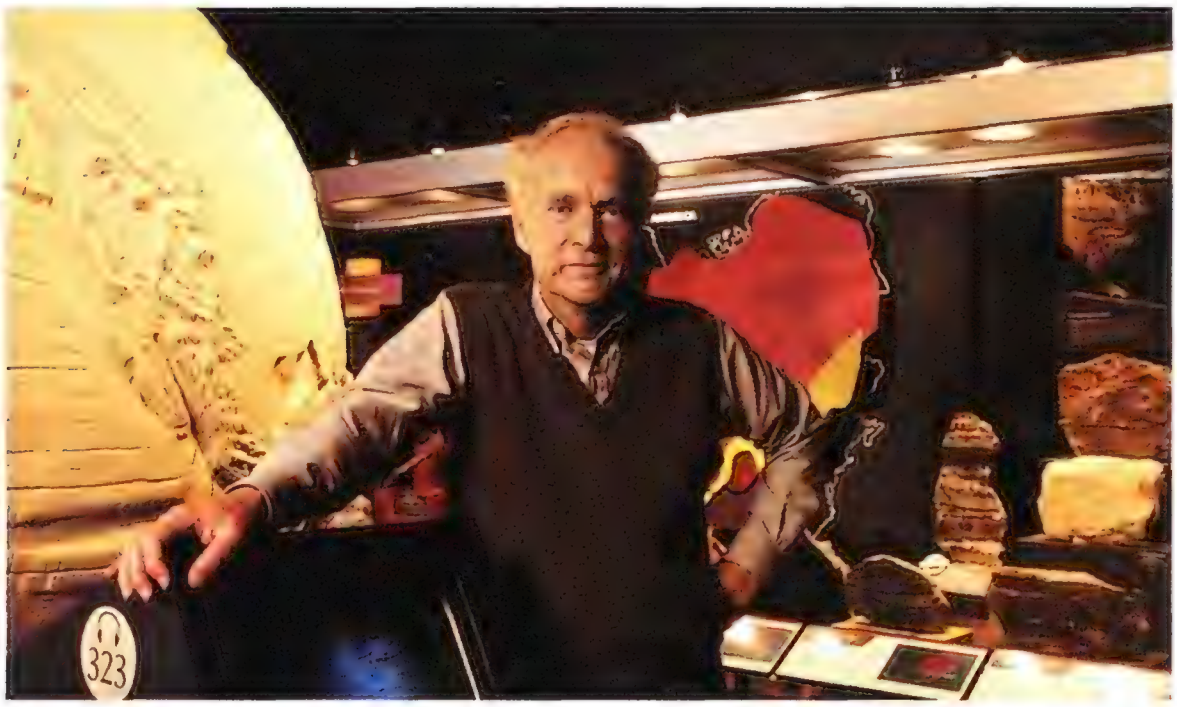
All right, so why undersea volcanoes? There are plenty in the open air. "Japan is one of the best places to study explosive submarine volcanoes. For some time people didn't recognize that they even existed. We didn't know they were there unless they happened to erupt." For Fiske, and the Japanese, too, the most fascinating part is the fabulous deposits of metal-bearing minerals left by these eruptions. "We're talking about five or ten cubic *miles* of debris. I mean, these eruptions can be big."

Many ore deposits are formed from submarine volcanoes. The point is, on land vast amounts of valuable minerals are ejected by volcanic eruptions, only to be carried away by the wind. "But in an undersea eruption, these emanations hit cold seawater and are precipitated. They end up as mineral deposits on the ocean floor." And that also has the attention of the Japanese, although there are no immediate plans to mine the deposits.

"Volcanoes attract attention," Fiske says. "They show clearly that this earth of ours is alive, and not just sitting there like the everlasting hills. Volcanoes grow and do all kinds of interesting things." Interesting: that would be the word for Kilauea, the Hawaiian volcano that has been erupting continually since January 1983. Fiske spends a lot of time in Hawaii; he has been going there for 30 years. "We rappel deep into cracks looking for layers of ash between lava flows. They are an indicator of how Kilauea has been breaking apart over the last 1,000 years.

"As we speak, lava is pouring into the ocean, building new land. What I'm concentrating on is the fact that the volcano's magma is actually pushing its south flank into the sea."

The area being pushed aside at a



Fiske helped create the Smithsonian's new Plate Tectonics Gallery. The globe and other colorful displays explain why most volcanoes are located along plate boundaries.

rate of some 10 to 15 centimeters a year—geologically comparable to the speed of light—forms a gigantic rectangle, 50 miles across and three miles thick. "We're studying how the volcano is doing this and what the evidence is for its rates of motion in the past. The south flank of Kilauea, as it detaches, leaves cracks and faults, and we study these."

If this entire south side of the mountain ever slides off into the Pacific, "it would be truly apocalyptic. There might be tidal waves hundreds of feet high; every coastal community in Hawaii would be at risk."

Something like it has happened already: hundreds of thousands of years ago the eastern half of Oahu broke off and parts of it slid 200 miles across the ocean floor. It must have been a disaster of biblical proportions.

and were also good personal friends. Wonderful people. Very gregarious. They were serious volcanologists and knew the dangers—they just became a little too careless. In 1991 while filming a Japanese volcano called Unzen, they and 40 others were caught in an avalanche of ash and hot gas. Gas masks or fire suits wouldn't have protected them. They were just too close at the

"We rappel deep into cracks looking for layers of ash between lava flows. They are an indicator of how Kilauea has been breaking apart over the last 1,000 years."

Fiske has never seen a volcano aborning, like Paricutín, which in 1943 grew out of a Mexican farmer's cornfield much to the farmer's irritation. But he has seen a lot of sudden activity. He has been lucky, too. "I was in a helicopter crash in the eastern Caribbean, which I regard as a close call. The helicopter was destroyed. I was so thoroughly strapped in that I wouldn't have made it out if the fuel tank had exploded. Other than that I've never been endangered by working on volcanoes." A number of Fiske's colleagues and friends have been killed, including the famous French husband-wife team of volcano cinematographers, Maurice and Katia Krafft, who traveled the world filming eruptions. "I met them 30 years ago and got to know them very well. They were good friends of the Smithsonian's Global Volcanism Program

wrong time. It would be an awful death—being baked in the extreme heat. Generally, you can move out of the way in time. Lava flows slowly. But an explosion or an avalanche of hot gas can engulf you in an instant."

When we met, Fiske was mourning the tragedy on Montserrat in the Caribbean. "The southern two-thirds of the island is just devastated, everybody's left, 20 or so people killed and no end in sight. This can go on for two or three years. It's terrible: people have lost their property, their houses; people are still paying mortgages on property covered by ash." Everything was covered by inches and feet of gray mud, the result of dozens of pyroclastic flows. Buildings were buried to the rooftops.

Fiske got into his work by luck: he had an uncle who was a geologist for an oil company in Venezuela, and at age 10 he decided to do the same. "As a kid growing up in Baltimore it seemed really romantic." For a while he had summer jobs for oil firms. Petroleum geologists lead fairly eventful lives. Lots of travel.

But there was more than that. While getting his doctorate at Johns Hopkins, Fiske joined forces with two of his favorite professors studying Mount Rainier. Like Mount St. Helens, Rainier will doubtless erupt in the future (SMITHSONIAN, July 1996) and could send an enormous river of mud and debris, called a "lahar," straight down upon densely populated areas. From then on, for Dick Fiske, it was volcanoes.

I forgot to mention that Fiske was the director of the National Museum of Natural History for five years. "I enjoyed most of it but yearned to get back to research. Mount St. Helens erupted while I was director. It pained me not to be scientifically involved." Fiske had a major role in organizing the museum's magnificent new Janet Annenberg Hooker Hall of Geology, Gems and Minerals, including its dramatic Plate Tectonics Gallery. He was also chief curator for the Smithsonian Institution Traveling Exhibition Service show "Inside Active Volcanoes" and spearheaded a video production, *Inside Hawaiian Volcanoes*. "It's a splendid video, produced and directed by Maurice Krafft," Fiske noted. "It's for sale down in the shop and by mail order." (See *Additional Sources*, p. 156.)

"I do like the fieldwork best, though," he said. "I sometimes take my family to Hawaii on vacations, but when I'm there to work there's little time for anything else. Once you get started in volcanoes you become a junkie, I guess. The earth is always changing, and you're trying to outfox it, understand its past activity and predict what it's likely to do in the future. Volcanoes are exciting, and for me they have made for a wonderfully fulfilling career."

1 We've been on a roll for 67 years.

2 Now we've popped up with another big idea.

It's an ingenious dispensing system that pops up strips of tape – pre-cut, one at a time, right into your hand. New Scotch™ Pop-up Tape Strips make gift wrapping easier, especially when you've got your hands full. We're making tape even more handy, because we make the leap *from need to...*

3M *Innovation*

©3M 1997

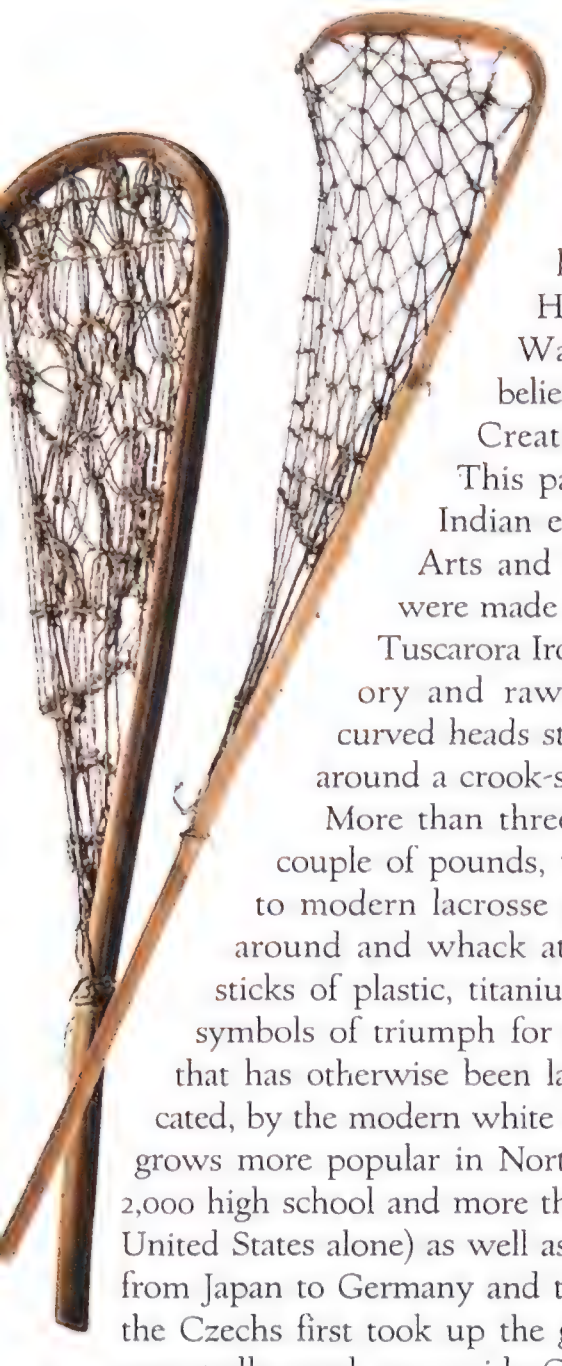
For more information, call 1-800-3M-HELPS, or Internet: http://www.mmm.com

THE OBJECT AT HAND

"Little Brother of War"

LACROSSE STICKS WERE TOOLS OF THE TRADE IN A RUGGED INDIAN GAME NOW GROWING POPULAR AROUND THE WORLD

BY ADELE CONOVER



"Sticks" such as those at left were the principal weapons used in a semi-sacred ball sport variously known as "They Bump Hips" or the "Little Brother of War" that American Indians believe was given to them by the Creator sometime in ages past. This pair is part of the American Indian exhibit in the Smithsonian's Arts and Industries Building. They were made only a century or so ago by Tuscarora Iroquois craftsmen using hickory and rawhide, the wood for their curved heads steamed for hours, then bent around a crook-shaped block.

More than three feet long and weighing a couple of pounds, they would seem unwieldy to modern lacrosse players, who pass the ball around and whack at each other with 12-ounce sticks of plastic, titanium and nylon. But they are symbols of triumph for a Native American culture that has otherwise been largely ignored, if not eradicated, by the modern white world. Year by year lacrosse grows more popular in North America (there are some 2,000 high school and more than 500 college teams in the United States alone) as well as in other parts of the globe from Japan to Germany and the Czech Republic. (When the Czechs first took up the game in the late 1970s, they reportedly used as a guide George Catlin's famous 1834 painting of Choctaws playing the game [p. 34].) Yet lacrosse remains a uniquely Indian sport, requiring fierce competitiveness, speed and endurance, remarkable dexterity and tolerance of pain.

These days, of course, it is not lacrosse but professional football—with hockey as a close second—that people might reasonably describe as the "Little Brother of War." As played today, men's lacrosse involves ten players per team and lasts 60 minutes in a space roughly the size of a football field. It is still a game of hard knocks and bruises, played with fast-paced, passionate zeal by men and women. A remarkable witness to the demands and fascinations of the game is football's legendary running back Jim Brown. "Lacrosse is my favorite game," says Brown. "It takes tremendous endurance and skill."

According to Rick Hill, Sr., a lacrosse stalwart and a professor of Native American studies at the State University of New York at Buffalo, little is known about the two Smithsonian sticks. But studies by Smithsonian researcher Thomas Vennum, Jr., author of *American Indian Lacrosse: Little Brother of War* (Smithsonian Press, 1994), suggest that in design lacrosse sticks are descendants of war clubs.

The butt of one elaborately carved stick at the University of Pennsylvania, crafted a century and a half ago, represents a hand holding a ball. Alongside it on the shaft is a carving of a handshake. The clasped hands, Vennum says, are not necessarily friendly. They may be symbolic of a dance in which warriors clasped hands to "strengthen themselves . . . as protective medicine" for battle. Some experts regard the carved ball in the hand as some kind of medicine ball, but Vennum thinks it is also linked to the ball end of war clubs, often carved as if held in the mouth of a snake or the claws of a bird of prey. The idea was that when such clubs were used in battle, the snake or hawk symbolically loosed its grip, sending the ball flying through the air to strike an enemy's head and kill him.

Sometimes the ball was carved as a human head that would fly off the club's handle and smack an enemy brave. One Iroquois legend tells of a flying head pursuing a whole family, bent on its annihilation. At the last second the ball is caught and thrown to its death in a vat of boiling bear grease.

As the game was played by its original inventors, from 30 to 50 players might take part on vast ball fields without sidelines whose variable length was determined by both teams prior to the match. Games lasted for days at times, and in some tribes players and nonplayers alike bet ponies, fortunes in fur and beadwork, even wives and children, on the outcome.

Early French and English settlers at first were both startled and horrified by the game. "Almost everything short of murder is allowable," one noted. "If one were not told beforehand that they were playing," another wrote, "one would certainly believe that they were fighting." Soon, however, they fell under the spell of the game, learning to

JANINE JONES AND PAM DEWEY/NATIONAL MUSEUM OF THE AMERICAN INDIAN

Presenting Jaguar's Symphony in V8.

Enjoy tomorrow. Buckle up today. © 1997 Jaguar Cars

The performance is about to begin. Introducing the Jaguar XJ8. With a resculpted interior, a new multiplex electrical system, and a beautifully orchestrated 290hp, 32-valve, aluminum-alloy AJ-V8. Call 1-800-4-JAGUAR or visit www.jaguarcars.com/us.

JAGUAR

A new breed of Jaguar

Choctaw villagers, painted by George Catlin in 1834, play in a free-for-all style on a field with no boundaries. Today the game is limited to 10-12 players on a side.

watch (and place side bets) among themselves. So much so that lacrosse played a role during the period of Pontiac's Rebellion in which several Indian nations fought to reclaim lands from occupying British forces in what is now the Midwest. In 1763, during King George III's birthday celebration, Indians staged a game outside Fort Michilimackinac on Lake Michigan. While His Majesty's soldiers were caught up in the game's progress, warriors took the fort.

The later history of the "Little Brother of War" was sometimes as contentious as the relationship between Indians and Euro-Americans. According to U.S. Lacrosse, the Baltimore-based national governing body of the sport, white Canadians were playing as early as 1839. By 1856 in Montreal the first non-Indian team had been organized, and in 1860 a Canadian dentist, Dr. William George Beers, wrote the first Europeanized rules.

For a while lacrosse was promoted as the national game of Canada. Native American teams toured Europe playing exhibition games, including one for the benefit of Queen Victoria. Then, in 1880, the National Lacrosse Association of Canada banned Indians from championship play—officially on the grounds that the Indians were paid "professionals" not eligible for "amateur" sports. By that time the game was catching on in North American prep schools and colleges, with a scattering of Indian varsity players at such schools as Dartmouth and (later) Syracuse.

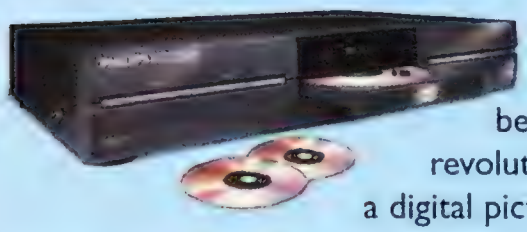
Today in Indian communities all over North America at the first sign of spring youngsters sally forth carrying lacrosse sticks. Many Indian players still request to be buried with their sticks beside them. The tradition of carved wooden lacrosse sticks still flourishes as well. In the Tuscarora Nation, near Sanborn, New York, Tuskewe Krafts, a firm owned by John Wesley Patterson, Jr., turns out 10,000 sticks a year at prices running from $60 to $90.

For many Indians in ancient days, and today as well, a lacrosse game was a ceremonial replay of the Creation story, and of the struggle between good and evil that followed it. The game could also be worldly practical—mock war used for diplomatic purposes or as a prudent step back from the threat of war. The story, retold by Vennum, of two lacrosse games played almost exactly 200 years ago between the Mohawk and the Seneca seems to offer a case in point.

Both belonged to the powerful league of Six Nations, the Iroquois confederacy that also included the Onondaga, Cayuga, Oneida and Tuscarora. The year was 1794. After the French and Indian Wars and the American Revolution, whites were again threatening Indian holdings in what is now Ohio and western New York. Chief Joseph Brant (Thayendanegea, in Mohawk), a powerful chief who had sided with the British during the Revolution, was negotiating with them for land in Canada, but the site offered was unacceptable. The Seneca agreed; if they took it the Mohawk would be isolated from the rest of the Six Nations. When Seneca intervention resulted in a better site for the Mohawk, Brant set up a ceremonial lacrosse match in part, Vennum speculates, to celebrate the Seneca help.

There was also bad blood between Brant and Red Jacket, an influential Seneca chief, going back to a time when Brant had called him a "cow killer," because it was said Red Jacket sent Seneca warriors off to battle while he stayed at home butchering their cows for himself. The match may have represented a fence-mending effort on Brant's part. If so, it apparently hit a snag. During the game, according to a report written at the time and cited in a biography of Brant published in 1838, a Mohawk lost his temper and "struck a sharp blow" to his opponent with his stick. All action stopped, the story goes; the Seneca team walked off the field. The Mohawk and the Seneca did not play each other again until 1797. But they kept on playing, and so did the other Iroquois nations. Lacrosse, in fact, was one of the things that helped hold the Six Nations together through the difficult years that followed.

In 1990 the Iroquois Nationals, an all-Iroquois lacrosse team, traveled to Australia for the world championship under their own flag and carrying Iroquois passports. "We stood tall," says Rick Hill. "For a few moments the lacrosse-playing nations (England, Japan, Australia, the Czech Republic, the United States, Canada, Wales, Scotland, Sweden, Germany) saluted our national flag. It was quite a change after 200 years."



From Hollywood to Main Street, it's being heralded as the beginning of a home entertainment revolution. It's called DVD Video. With a digital picture that's better than laser disc, and state-of-the-art digital audio, DVD is destined to change your home into a, well, you get the picture. Now movies meet the digital age. And Philips Magnavox is there to help make the introductions.

DVD Video from Philips Magnavox.
Technology for the heart, the spirit and the imagination.

Let's make things better.

PHILIPS MAGNAVOX

© 1997 Philips Electronics North America Corporation

Time Out—Sports in Art

SMITHSONIAN HIGHLIGHTS

"I AM WORKING ON A LARGE DECORATIVE landscape of Central Park," wrote New York artist Agnes Tait to the local chairperson of the New Deal's Public Works of Art Project in 1934. "My scene is that of a large skating pond against the background of large buildings seen in the late afternoon light. Fortunately, the recent snows have afforded the effects I was seeking." The work, *Skating in Central Park* (above), was chosen for display at the Department of Labor and became the artist's most popular painting. In portraying this particular slice of the American scene, Tait captures the gaiety and commotion of the moment and makes tangible the brisk, cold feeling of a winter day.

The painting is currently on display at the National Museum of American Art in a special exhibition that celebrates the opening of the neighboring MCI Center, home to D.C.'s professional basketball and hockey teams, the Wizards and the Capitals. On view through April 5, 1998, "Time Out—Sports in Art" features works drawn from the museum's permanent collection that depict a sweep of sporting activities ranging from Soap Box racing to bush league baseball. As leisure time and sports entertainment expanded in the 19th century, American artists who shared the public's growing fascination with sports reacted by incorporating the subject into their art. From photographer Harold Edgerton's stop-action exposures of pole-vaulting to Claes Oldenburg's preliminary model for his monumental *Batcolumn*, the show presents an engaging look at this genre of American art. —*Diane M. Bolz*

NATIONAL MUSEUM OF AMERICAN ART

There are still a few wisps of magic left in the world,

and a beautiful Princess® knows just where they're hidden.

Depending on the day, you're likely to find this Princess® in any of 236 ports on six continents. And, because her company includes trains, float planes, river rafts, even donkeys, you'll also find her in places no cruise ship has ever gone before. The truth is, from the Caribbean to the Gulf of Alaska, from the Holy Land to the Land Down Under, Princess offers more itineraries to more destinations around the world than any other cruise line. So whether it's a 7-day Caribbean cruise or a 67-day world voyage, Princess is the ideal choice for your next vacation. To learn more about Princess cruises and cruisetours, and the distinctive advantages of our new Grand Class℠ fleet, call 1-800-PRINCESS or see your travel agent.

PRINCESS®

Let her take you away

Caribbean, Panama Canal, Mexico, South America, Costa Rica, Europe, Alaska, Canada/New England, Orient/Asia, India, Africa, Australia/New Zealand, Hawaii/Tahiti, World Cruise.

© 1997 Princess Cruises, Inc.

British & Liberian Registry.

SMITHSONIAN

HIGHLIGHTS

Special December Exhibitions, Events

NATIONAL MUSEUM OF AMERICAN ART

Time Out—Sports in Art (through April 5, 1998) Temporary installation marking the opening of the new MCI Center in Washington, D.C. celebrates sports as envisioned by a variety of painters, sculptors and photographers. See *Highlights*, page 36.

Colonial Art from Puerto Rico: Selections from the Gift of Teodoro Vidal (through March 8, 1998) Paintings, miniatures and sculptures by such artists as José Campeche and Felipe de la Espada.

Ansel Adams, A Legacy: Masterworks from the Friends of Photography Collection (through March 29, 1998) Images by the renowned American landscape photographer.

RENWICK GALLERY

Michael Lucero: Sculpture (through January 4, 1998) Two decades of the contemporary artist's glazed ceramic, bronze and mixed-media sculptures.

Reinstallation of the Permanent Collection Thematic reinstallation showcases 19th- and 20th-century works by nationally prominent artists in a variety of craft media.

NATIONAL PORTRAIT GALLERY

Mathew Brady's Portraits: Images as History, Photography as Art (through January 4, 1998) Comprehensive exhibition features more than 100 images representing all facets of Brady's work.

Breaking Racial Barriers: African Americans in the Harmon Foundation Collection (through January 4, 1998) Show presents 20 works from the groundbreaking 1950s exhibition "Portraits of Outstanding Americans of Negro Origin."

Edith Wharton's World: Portraits of People and Places (through January 25, 1998) Paintings, miniatures, photographs and literary artifacts.

HIRSHHORN MUSEUM & SCULPTURE GARDEN

Stanley Spencer: An English Vision (through January 11, 1998) Landscapes, still lifes, genre paintings, portraits, social narratives and religious scenes represent the 20th-century British artist's independent, eccentric vision.

Directions—Toba Khedoori (through February 22, 1998) Exhibition features a floor-to-ceiling work on paper created especially for the museum's Directions Gallery by the Los Angeles-based artist.

NATIONAL AIR AND SPACE MUSEUM

Star Wars: The Magic of Myth (through November 1, 1998) Exhibition commemorating the 20th anniversary of the *Star Wars* trilogy showcases original props, models, costumes and artworks from the films. Highlights include robots C-3PO and R2-D2, a production model of the *Millennium Falcon* and Han Solo's figure frozen in carbonite. Free timed same-day tickets are available only at the museum's ticket desk, on a first-come, first-served basis. Advance tickets can be obtained through ProTix for a service charge of $2.25 per ticket; call 1-800-529-2440. For general information, call 202-786-2122 (24-hour recording).

Space Race Permanent exhibition traces the competition in space between the United States and the former Soviet Union from its 1950s origins to the recent international cooperation.

Mission to Mir (11:30 A.M., 1:40 and 3:50 P.M. daily) New Imax film takes viewers aboard the first permanent space station—Russia's *Mir*.

NATIONAL MUSEUM OF AMERICAN HISTORY

Holiday Trees (December 5-January 4, 1998) An array of holiday trees will be displayed throughout the museum.

Holiday Celebration (December 26-29) This year's festivities will feature Wong Chinese Lion Dancers, Kwanza workshops, a holiday magic show,

Planning a Smithsonian Visit?

Receive a free Associates' planning packet. Write Smithsonian Information, Smithsonian Institution, Washington, D.C. 20560, or call 202-357-2700 (voice) or 202-357-1729 (TTY), 9 A.M. - 5 P.M., Monday-Friday; 10 A.M. - 4 P.M., Saturday-Sunday. *Note:* Parking near the Smithsonian is limited. The Metrorail subway is convenient to all museums (details in packet).

Begin your visit at the Smithsonian Information Center's Associates' Reception Desk—open 9 A.M. - 4 P.M. daily—in the Castle. Special materials await you there. The Court dining room and all other eating facilities in the National Museum of Natural History are closed. Associates may receive a discount at the National Air and Space Museum's Wright Place restaurant, open 11:30 A.M. - 3 P.M. daily.

Smithsonian museums are generally open 10 A.M. - 5:30 P.M. daily, except December 25. Hours at the National Zoo are 10 A.M. - 4:30 P.M. daily for buildings, 6 A.M. - 6 P.M. for grounds.

SMITHSONIAN WEBSITE

The Smithsonian home page on the World Wide Web (www.si.edu) offers on-line information about exhibitions, collections, events and products.

United at last.

Miles accrued and awards issued are in accordance with the terms and conditions of the United Airlines Mileage Plus Program. [illegible] and its affiliates are not responsible for any telecommunications products or services associated with this offer. *Excluding [illegible] and discounts. Expires 12/31/97. Other terms apply. © 1997, MCI Telecommunications Corporation. All rights reserved.

MCI and United Airlines are proud to announce our new Mileage Plus partnership.

The waiting's over. Introducing the MCI/Mileage Plus Program. For a limited time, you'll receive 3,000 Mileage Plus® bonus miles when you sign up for long distance. Then earn another 5 miles for every dollar* you spend on long distance and many other MCI services. The miles are automatically posted to your Mileage Plus account. And there's no monthly spending requirement to earn miles, so every dollar counts. Imagine, now you can earn miles for something you're already doing.

Earn 3,000 bonus miles.
Simply call 1-888-MCI-UNITED

UNITED AIRLINES MILEAGE PLUS®

MCI

storytelling, and craft and food demonstrations.
Stalking the Elusive Computer Bug (through March 1998) Graphics, advertisements and microprocessors help explain certain computer problems. On view also is the first actual bug (moth) found in a computing device (at the Harvard Computational Lab, in 1947).
Science in American Life Permanent exhibition tracks advances and discoveries in science over the past 125 years.
Information Age: People, Information and Technology Permanent installation traces the 150-year history of information technology.

NATIONAL POSTAL MUSEUM
[NEAR UNION STATION ON CAPITOL HILL]

The First Federal Postage Stamp Issue (through January 2, 1998) Display commemorates the 150th anniversary of the first U.S. postage stamps.
What's in the Mail for You! New permanent state-of-the-art exhibition offers an innovative look at the direct mail industry.

NATIONAL MUSEUM OF NATURAL HISTORY

Janet Annenberg Hooker Hall of Geology, Gems and Minerals New gallery showcasing the National Gem Collection also takes a look at the birth and evolution of the Solar System and at Earth's changing surface.
Agayuliyararput (Our Way of Making Prayer): The Living Tradition of Yup'ik Masks (through January 4, 1998) Exhibition from the Anchorage Museum of History and Art presents 19th- and early 20th-century masks created by Yup'ik Eskimos.
Contemporary Korean Ceramics New permanent exhibition features 33 contemporary works inspired by centuries-old ceramic traditions.
Exploring Marine Ecosystems Permanent display explores two of the many ecosystems contained within the world's oceans: a tropical coral reef and a temperate rocky shore reef.

Mathew Brady photographed Ulysses S. Grant at City Point in Virginia in June 1864. The image is one of more than 100 on view in the National Portrait Gallery exhibition.

NATIONAL ZOOLOGICAL PARK

Amazonia Permanent installation recreates a microcosm of the world's largest rain forest and river habitat.
Think Tank Permanent exhibition examines the biology and evolution of animal thinking.

NATIONAL MUSEUM OF AFRICAN ART

Gifts to the National Collection of African Art (through March 4, 1998) Exhibition of recent gifts honors the collection-building legacy of the late director, Sylvia H. Williams.
The Poetics of Line: Seven Artists of the Nsukka Group, Nigeria (through April 26, 1998) Works by the Nsukka group of artists, who studied or taught in the Department of Fine and Applied Arts at the University of Nigeria, Nsukka, and whose art was inspired by Igbo culture.

FREER GALLERY OF ART

Japanese Art of the Meiji Era (1868-1912) (through April 26, 1998) Exhibition explores the museum's holdings of paintings, drawings, ceramics, lacquer and metalwork from the Meiji era.
Shades of Green and Blue: Chinese Celadon Ceramics (runs indefinitely) Exhibition of Chinese ceramics examines the development of the gray-green glaze that is known in the West as celadon.
Art for Art's Sake (runs indefinitely) Display takes a look at the collection of American art assembled by the gallery's founder, Charles Lang Freer.

ARTHUR M. SACKLER GALLERY

Twelve Centuries of Japanese Art from the Imperial Collections (December 14-March 8, 1998) Exhibition honoring the 75th anniversary of the Freer Gallery of Art features art from the Imperial Household Agency and the Emperor of Japan.
The Jewel and the Rose: Art for Shah-Jahan (through February 1998) Paintings, textiles and objects illustrate the splendor of Indian artistic expression during the reign (1627-58) of Shah-Jahan, builder of the Taj Mahal.
Khmer Ceramics (runs indefinitely) Rare glazed vessels from the 9th-14th-century Khmer Empire.

Mexico City is a live mosaic. According to Jon Kohnstamm, it´s like a storybook that takes you through the prehispanic age, the colonial period, the present and the future. All you have to do is turn the pages.

Gaudelli Publicidad MCW / CDM 012

A quick visit turned into a long-term romance. You just can´t get enough of the place. It´s magical! When U.S. friends come down on vacation, I like to show them the Bazaar Sabado in San Angel, or Coyoacan, which is really more like a Colonial town. On weekends, I enjoy taking them to

our magnificent museums and art galleries. I can´t think of a more exciting, colorful city anywhere in the world.

Culturally, I´d say that it ranks right up there with New York or London. If Paris is a moveable feast, then Mexico City is an endless fiesta for the senses."

THE A+ CITY, MEXICO

For more information call toll free. In the U.S. and Canada: 1-800-44- MEXICO
In Mexico: INFOTUR (5) 525-9380/250-0123 e-mail: Turismo@ticnet.com.mx internet: http://mexico-travel.com/

ARTS AND INDUSTRIES BUILDING

Stories of the People (through January 25, 1998) Some 200 objects drawn from the collection of the National Museum of the American Indian represent six American Indian cultures.
In Search of Balance: The Artist Scholar (through March 11, 1998) Paintings, sculptures and other works by six African-American art history scholars.
Discovery Theater Live theater for young audiences. For information and reservations, call 202-357-1500 (voice or TTY) weekdays, 9 A.M. - 4 P.M.

THE CASTLE—INFORMATION CENTER

Smithson's Gift Permanent display tells the story of the British scientist whose bequest founded the Smithsonian.

INTERNATIONAL GALLERY, S. DILLON RIPLEY CENTER

Seeing Jazz (through January 19, 1998) SITES show presents a panorama of artistic responses to jazz with paintings, sculpture, drawings and photographs by such artists and writers as Sam Gilliam and Toni Morrison.

ANACOSTIA MUSEUM

Museum Reopening Update The museum will reopen on January 17.

HEYE CENTER, NATIONAL MUSEUM OF THE AMERICAN INDIAN
[NEW YORK CITY]

To Honor and Comfort: Native Quilting Traditions (through January 4, 1998) Exhibition of quilts demonstrates the cultural and economic significance of quilt making in tribal communities.

COOPER-HEWITT, NATIONAL DESIGN MUSEUM
[NEW YORK CITY]

Design for Life: A Centennial Celebration (through January 4, 1998) Exhibition of objects drawn from the museum's collections examines how design shapes architecture and environmental space and the activities and patterns of daily living.

Girl in a Shattered Mirror (1955) by James A. Porter is in the Arts and Industries show "In Search of Balance."

EXHIBITION CATALOGS

Catalogs available currently include:
Mathew Brady and the National Image of History ($39.95 cloth)
Breaking Racial Barriers: African Americans in the Harmon Foundation Collection ($26.95 cloth)
Star Wars: The Magic of Myth ($49.50/$24.95 paper)
The National Gem Collection ($39.95/$24.95 paper)
The Living Tradition of Yup'ik Masks ($60/$40 paper)
Stanley Spencer ($45/$32 paper)
New Traditions from Nigeria ($49.95 cloth)
To Honor and Comfort: Native Quilting Traditions ($50/$35 paper)
To order, send check or money order to Smithsonian Museum Shops, P.O. Box 1140, Newington, Virginia 22122. Include 15 percent of purchase to cover postage and handling (minimum, $4.50).

SMITHSONIAN PRODUCTIONS

It's a Wonderful Christmas Andy Williams narrates the story that inspired Frank Capra's film classic *It's a Wonderful Life*. The hour-long Smithsonian radio special also features interviews with Frank Capra and members of the original cast. Check local public radio listings.

THE SMITHSONIAN ASSOCIATES, RESIDENT PROGRAM

To become a member, or for fee and ticket information, call (202) 357-3030. December events include:
Under African Skies (December 4; 6:30 P.M.) A literary evening at the Embassy of the Republic of South Africa with author Sindiwe Magona.
Liv Ullmann Presents Her New Film: Private Confessions (December 5; 7:30 P.M.) Washington premiere introduced by the celebrated actress/director.
Words and Images of the Scandinavian Artist (December 6; 9:30 A.M. - 12:30 P.M.) Liv Ullmann and film scholars discuss the work of Ingmar Bergman.
Maria Callas Remembered: The Life of a Diva (December 6; 9:45 A.M. - 4 P.M.) All-day seminar examines the life and music of the international star.

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

SITES organizes and circulates exhibitions to cities throughout the United States and abroad. To sponsor a show in your community, write SITES, Smithsonian Institution, Washington, D.C. 20560. Here are some December exhibitions:
- Jacksonville, Florida (December 13-March 8, 1998) *Spiders!*, Museum of Science and History.
- Lincoln, Nebraska (December 6-January 18, 1998) *VanDerZee, Photographer (1886-1983)*, Sheldon Memorial Art Gallery.
- Windsor Locks, Connecticut (December 6-January 18, 1998) *Women and Flight*, New England Air Museum.

SPECIAL EXHIBITION

Woven by the Grandmothers: Nineteenth-Century Navajo Textiles from the National Museum of the American Indian (through January 11, 1998) Exhibition of weavings created by Navajo women was organized by the NMAI. On view at the **National Museum of Women in the Arts** in Washington, D.C.

COURTESY OF CONNIE PORTER UZELAC

*Excludes other GM products. ©1997 GM Corp. Buckle up, America!

The kids aren't going to listen to you anyway.

Save your breath. The all-new **Chevy™ Venture™ is the only minivan* available with a Dual Mode Sound System** that lets you listen to the radio in the front seat and lets them listen to a CD of whatever they call music in the back. And vice versa. Which means they won't roll their eyes when you sing, and you won't have to listen to something that sounds like bees attacking a hippo. And that should help keep every trip in harmony.

Chevy Venture Let's Go!

For a free brochure and video, call toll free **1-888-950-VENTURE** or visit us at **www.chevrolet.com**

FIXING HEALTH CARE ISN'T EXACTLY BRAIN SURGERY. (IF ONLY IT WERE THAT EASY.)

About the only aspect of the health care debate any two people might agree on is that the system needs work. Some might say considerable work. That said, we'd like to weigh in with a few ideas of our own since we're actually in the position to do something about it. ▪ First of all, the paramount focus of health care must be quality. It should be the only reason we're in this business–to help raise the quality of care not just for our members, but for all Americans. Which is why we're working to enable a level of health care never available under the old fee-for-service system. ▪ Of course, we can't do this alone. So we're joining with academic medicine to make the system better. That's the reason we've pioneered and allocated $15 million to fund the Academic Medicine and Managed Care Forum. An ongoing gathering of our experts, and those from more than 30 of the nation's leading universities and teaching hospitals. Including Johns Hopkins, Yale, Emory, Baylor and Stanford. Together, we're seeking new ways to reach out and help make sure patients get the health care they need. ▪ Already, we send timely reminders that encourage members to see their doctors for immunizations to prevent illness and to get screenings that help physicians diagnose disease early enough to do something about it. If at first they don't respond, we remind and remind again. Just one result is a significant reduction in late-stage breast cancer. ▪ To better manage chronic diseases, we've created outreach efforts that have reduced asthma emergencies 60%, promoted eyesight-saving laser therapy for diabetics and improved the quality of life for people with congestive heart failure. ▪ In case of rare illness, our National Medical Excellence Program® assigns a nurse case manager who coordinates access to some of the nation's leading specialists and hospitals, when appropriate care is not available locally. It's our policy and it should be everyone's. ▪ Frankly, there's more work to be done. And with the stakes so high, we're obligating ourselves to do more than our share of it. Because no matter how complex, it has never been our policy to turn our back on a problem. Whether it's that of a patient, or of an entire health care system.

Aetna US Healthcare™

You'll feel better with us.®

©1997 Aetna U.S. Healthcare Inc. www.aetnaushc.com

The Long Walk to Bosque Redondo

BY DAVID ROBERTS

ILLUSTRATIONS BY ARTHUR SHILSTONE

Most of the Navajos were forced to walk more than 300 miles to captivity; many did not survive the journey.

OFFICIALS CALLED IT A RESERVATION, BUT TO THE CONQUERED AND EXILED NAVAJOS IT WAS A WRETCHED PRISON CAMP

"I WAS BORN ON TOP OF THAT HILL OVER THERE," said Dave Wilson, pointing out the window of his wooden hogan into the April dusk. A small fire smoldered in the stove. I listened to the wind straining the limbs of the cottonwood tree outside.

That morning horsepacker Fred Blackburn, on his gray-and-white Appaloosa, and I, on his bay Missouri Fox Trotter, had ridden down Twin Trail, into the heart of Canyon del Muerto in northeastern Arizona. Astride his own horse, the 48-year-old Wilson, our Navajo guide, had picked his way down the stony and precipitous path with the nonchalance of an equestrian commuter. Eight-hundred-foot vertical cliffs of red sandstone enclosed our meander as we trotted across fallow cornfields, then forded a stream choked with spring snowmelt.

"This hogan belonged to my father," Wilson went on now. "He handed it down to me. My family goes back three centuries here in Del Muerto."

I knew, however, that the Wilson clan had suffered a profoundly traumatic hiatus in their homeland tenure dur-

Faced with a shortage of wood, the Navajos at Bosque Redondo built huts of sticks, cowhides and old canvas.

ing the 1860s. "Have you ever been to Bosque Redondo?" I asked. To this reservation on the Pecos River in eastern New Mexico, more than 8,000 Navajos had trudged on the Long Walk in 1864, after Kit Carson's soldiers rounded them up. Almost 200 miles east of the easternmost frontier of the people's ancestral heartland, the Bosque was a virtual concentration camp.

Wilson shook his head, then said, "I'm not sure how I'd feel about going there." There was a long silence before our guide pointed to his own head. "Everybody in my family has this curly hair. When my great-great-grandmother was released from Bosque Redondo, she was already pregnant, at age 14 or 15. She was probably raped there."

Every Navajo family has kindred stories of woe attached to the Long Walk and the prison camp on the Pecos. Even talking about their forebears' ordeal in the 1860s has been troubling for Navajos of Dave Wilson's generation.

Now, however, a powerful permanent memorial to the Navajo tragedy is being designed by a Navajo architect. If all goes according to plan, the monument on the banks of the Pecos will be under construction by the year 2000.

In a sense, the Navajo campaign of the 1860s was the same story, repeated time and again through the latter half of the 19th century, as white Americans pushed westward and displaced the Native Americans who had lived there for centuries. But the particular solution wrought upon these Athabascan seminomads had a perverse cruelty of its own. In terms of forced migrations in U.S. history, per-

haps only the Trail of Tears bears comparison with the Long Walk.

From 1846 on, American soldiers and settlers came into bloody conflict with Navajo sheepherders and warriors. The Diné, as the Navajo called themselves, reckoned their homeland by the four sacred mountains that roughly defined its corners: Blanca Peak and Hesperus Peak in Colorado, Mount Taylor in New Mexico, and the San Francisco Peaks in Arizona. In the 1860s, 12,000 Navajos, owning 250,000 sheep and 60,000 horses, lived in this parallelogram. Even today that heartland is sparsely populated. But by the 1850s, Anglos were afire with the passion to ranch its grasslands and dig up its hills in search of precious minerals. Today, scenic wonders have supplanted gold and cowpunching as the region's chief draw. Within the Navajo homeland lie such cynosures as Ship Rock and Monument Valley, and the place that was dearest of all to the Diné, Canyon de Chelly—of which Dave Wilson's Canyon del Muerto forms the north branch.

So fierce was the Navajo resistance to the Anglo invasion that by 1851 the governor of the New Mexico Territory had adopted a policy of extermination or total surrender. Again and again, American leaders failed to recognize that the Navajo, like most Western Indian tribes, had never been a unified nation. A given chief had authority over, at most, only a small band of followers primarily made up of his extended family. Yet again and again generals complained and newspapers screamed about "broken treaties" and "treacherous renegades."

THE LONG WALK WAS BORN IN THE BRAIN OF GEN. JAMES Henry Carleton, who became military commander of the New Mexico Territory in 1862. Carleton was, in the words of one historian, "tyrannical" and "aggressive" and "believed it his duty and destiny as a good Christian gentleman to tame the 'savages.'" One of his first acts in office was to order the famous scout Kit Carson (who had enlisted in the New Mexico Volunteers during the Civil War) to subdue and round up the Mescalero Apache. "The men are to be slain whenever and wherever they can be found. The women and children may be taken prisoners," Carleton decreed. Carson carried out this savage campaign, and after five months, about 400 Mescaleros were headed for Bosque Redondo, the rest having fled into Mexico. Next Carleton turned to the far more numerous Navajo.

From a base in the heart of Navajo country, at Fort Canby (near today's Window Rock, Arizona), Carson's soldiers relentlessly pursued their foe. During the first several months, very few Navajos were captured. Carson's success depended instead on demoralizing the Indians: wherever they could, the soldiers seized or slaughtered the Indians' livestock, cut down their peach trees and burned their fields. The troops were aided by Ute warriors, traditional enemies of the Navajo, who were conscripted for the chase.

Fifty-four years old, wearied from a vigorous life as a mountain man and scout for the expeditions of John C. Frémont, Carson had little stomach for the roundup. By now, moreover, he had grown far more sympathetic to the Indians' plight than most Army men (Carson's first two wives were Indians). Yet he carried out the hunt with the diligence of a good soldier.

The campaign pivoted on the approaching winter. Facing starvation during the year's leanest months, Navajos began coming in to surrender. The staunchest holdouts

In an intensive campaign to round up the Navajos, Kit Carson and his soldiers swept through Canyon de Chelly in the winter of 1864.

retreated to Canyon de Chelly, which the Navajo had regarded for centuries as their ultimate fortress.

From Fort Canby the dolorous procession to the Pecos began in March 1864. Even before they could set out on the 300-mile walk, scores of Navajos died at the fort from dysentery and exposure. Many more died on the exodus. Government records of the Long Walk tend to be vague on this account. One officer, leading a party of almost 950 men, women and children, arrived at Bosque Redondo to admit that 110 had died en route; yet in his report he could still claim that the "Navajos were greatly delighted and expressed great satisfaction with what they saw."

The Navajo oral tradition paints a markedly different picture. A recurrent theme of horror, passed on to the grandchildren of Navajos who made the Long Walk, held that stragglers in the procession, including pregnant women, children and the aged, were simply shot and left unburied beside the trail.

Last January, in the midst of a bitter cold snap, I traveled to Fort Sumner, on the eastern New Mexico plains. Driving east on U.S. 60, I passed abruptly out of the sunlight into a bank of raw fog; a stiff southeast wind blew stinging sleet across the empty highway. Every few miles, a forlorn ranch house appeared out of the mist. The bleak monotony of the prairie was broken only by the occasional lone juniper or cottonwood.

Abruptly I crossed the shallow Pecos River, crept through the somnolent town of Fort Sumner and found my way a few miles south to the site of Bosque Redondo, the "Round Grove," named for a stand of tall cottonwoods by the river. These were soon cut down, mostly for fuel.

Today, nothing remains of the ambitious complex of barracks and offices that made up the camp. A small modern edifice, housing a museum and office, constitutes Fort Sumner State Monument. Rangers Ira Rabke and Paul Fishell were glad to see me, so far the only visitor on this grim winter day. A mere 12,000 passersby stop here each year. (The region's chief—one might even say only—tourist attraction is the grave of Billy the Kid.)

A pair of quotations mounted in the museum neatly captured the bipolar perspective of Navajos and Anglos on the Long Walk and at the Bosque. An 1863 ballad of the New Mexico Volunteers had a jaunty swagger:

Come dress my gallant souls, a standing in a row.
Kit Carson he is waiting to march against the foe; . . .

To meet and crush the savage foe, bold Johnny Navajo, Johnny Navajo! Johnny Navajo!

Facing this boast were the words of Navajo headman Barboncito, who had eluded capture for months. Anticipating release from the camp in 1868, he remarked: "I hope to God you will not ask me to go to any other country except my own. It might turn out another Bosque Redondo."

General Carleton's own inspection team had found little to like about the site of Bosque Redondo, warning, in particular, that "building material will have to be brought from a great distance. The water of the Pecos contains much unhealthy mineral matter." But the general had made up his mind.

Coldhearted and stubborn though he was, Carleton was nothing if not shrewd. Two motives were central to his transplanting the Navajos and Apaches en masse to the Pecos. One hundred and sixty-five miles southeast of Santa Fe, the Bosque lay in a region so desolate that Carleton doubted white settlers would ever come into conflict with Indians situated there. And he hoped the Bosque would serve as a buffer against the marauding bands of Kiowas and Comanches even farther east.

Just how ill-conceived the Bosque would prove, however, became evident in the first months. Having observed linguistic similarities between the two tribes, Carleton assumed the Mescaleros and the Navajos would live in peace together. But in fact the peoples had often warred with each other. Now fights broke out, even though the wardens segregated the living quarters of one tribe from the other. As the Navajos streamed in, and the Apaches found themselves outnumbered by more than 20 to 1, the lot of the latter became especially oppressive.

As the inspection team had predicted, the alkaline water of the Pecos caused severe intestinal and stomach problems. After the supply of cottonwoods had been depleted, the Indians had to walk 12 to 20 miles to find firewood. Then, to make matters worse, for two summers in a row the corn crop at the Bosque failed in an epidemic of armyworm. Already plagued by dysentery, measles and sexual diseases, the Indians began to starve. By late 1865, the Mescaleros had had enough. In a coordinated escape planned in perfect secrecy, every Mescalero who could walk fled the reservation on the night of November 3. The Apaches were never again driven back to the Pecos. The Navajos lingered on, reduced to squalor and despair.

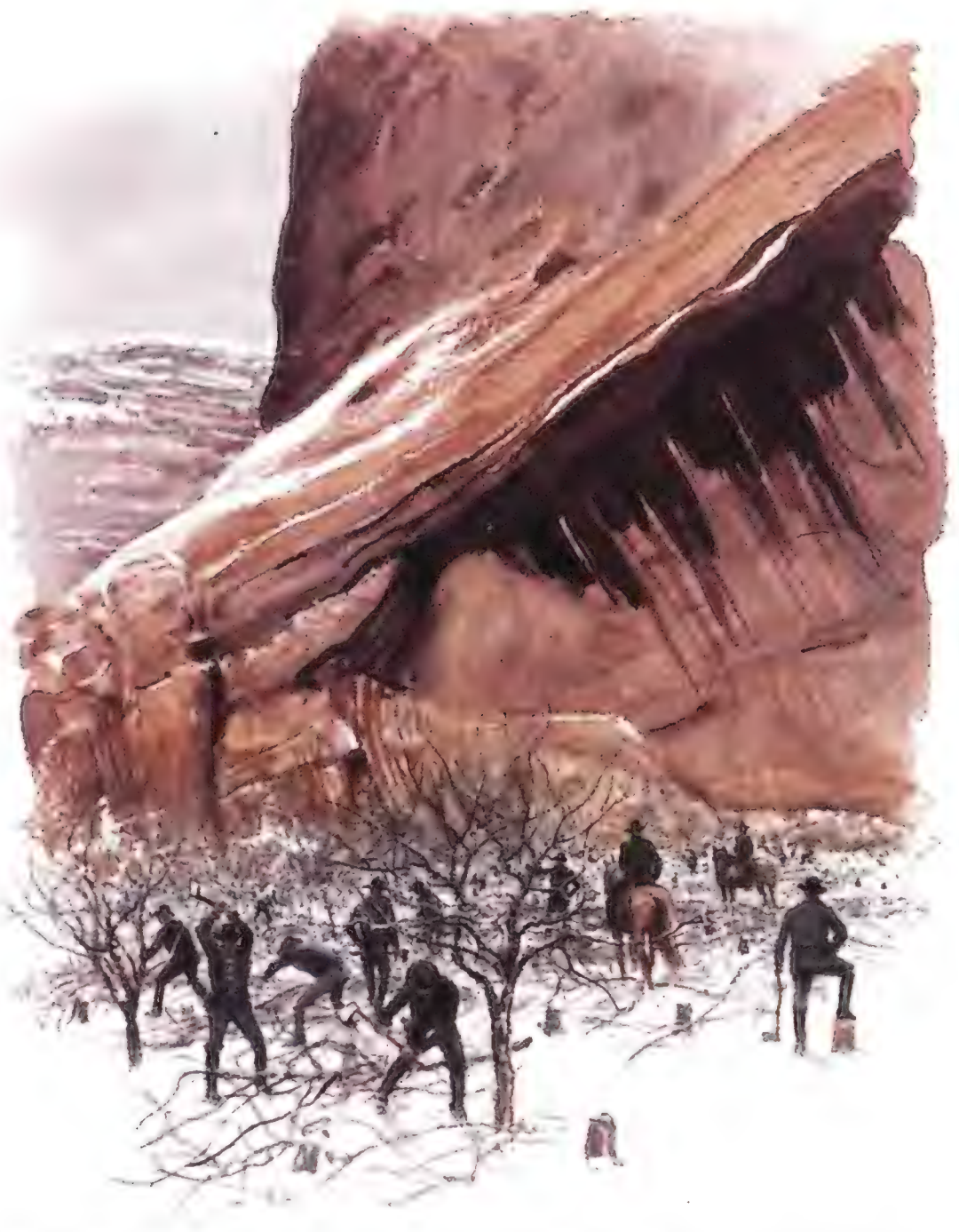
The Navajos tried to keep up their ceremonies, improvising as best they could. "As the Squaw Dance required horses, and horses were scarce," recalled Yasdebah Silversmith at the age of 90, "the Diné would put long sticks between their legs and pretend they were riding real horses." Another descendant, Mose Denejolie, was told by his grandparents, "The U.S. Army fed corn to its horses. Then, when the horses discharged undigested corn in their manure, the Diné would dig and poke in the manure to pick out the corn. . . ."

"I hope to God you will not ask me to go to any other country except my own," Navajo chief Barboncito pleaded. "It might turn out another Bosque Redondo."

IN TOWN I MET BOB PARSONS, A retired local schoolteacher who had become an expert on Bosque Redondo. He led me on a tour of the reservation site. In the driving sleet, it took an effort of will to get out of my car and walk a hundred feet, but the dismal weather only deepened my comprehension of the Navajo experience.

Not far from the monument visitors center, I came across a pile of stones. Beginning in 1971, Navajos who had ventured here from today's reservation had adopted the practice of carrying a single stone each from their homes to deposit on this spot, a travel shrine. The pile, partly covered by drifted snow, had every bit the power of walls built of engraved stones that I had seen in the Ladakh region of India, each stone carried miles to the site by a Buddhist pilgrim.

Farther south, beside the river, a 42,000-pound boulder trucked in from Fort Defiance (Fort Canby, in Kit Carson's day) in 1994 served as a kind of Plymouth Rock for the upcoming memorial. A plaque on the boulder in the Navajo tongue recorded the words of tribal chairperson Peterson Zah on



Crucial to Gen. James Carleton's strategy to force the Indians to surrender was the systematic destruction of their livestock and crops, including hundreds of peach trees.

the occasion of the stone's dedication. "We are the Diné," Zah had orated; "our endurance lies in our beliefs, prayers, chants, language and wisdom. . . . In beauty we walk."

We got back in the car. Driving obscure country lanes, Parsons demonstrated the full extent of the million-acre prison camp. And he proved to me that one impressive testimonial to the Navajo ordeal lives on in the otherwise sterile river plain.

To reforest the region with firewood, the Indians had been forced to plant 12,000 trees, most of them cottonwoods. The normal life span of a cottonwood rarely exceeds a century. Yet Parsons and others, consulting old maps and prowling across the grounds, had identified some 25 cottonwoods, still living after 130 years, that had been planted by Navajo or Apache hands.

In the past few years, Parsons succeeded in taking cuttings from several of these ancient cottonwoods and sending them to the American Forests organization. From the cuttings, the nonprofit group has propagated new trees. Eventually, sapling offspring of the historic cottonwoods will be planted at the headquarters of the Mescalero and Navajo reservations—as well as here, beside the Bosque Redondo memorial as it begins to rise on this river bottom of old sorrows.

IN ALBUQUERQUE, I MET DAVID SLOAN, the architect who won the design competition for the memorial. A down-to-earth 48-year-old, he had grown up in Utah and Arizona, uneasily straddling the divide between his Navajo legacy and the strictures of white America. In a boarding school in Flagstaff, he was punished—with kitchen duty and a rock-moving detail in the schoolyard—for speaking Navajo. "I moved rocks from fourth grade till I graduated," Sloan said wryly.

It was not until his late teens, when he toiled one summer in a government work program, that he ever heard of Bosque Redondo. One day an elder spoke to a history class attached to the program. "You know," the man told Sloan's class, "you need to be proud and respectful about how we Navajos are able to live. At one time, we were all imprisoned." Sloan never forgot the lesson. At the moment, he is trying to untangle his own genealogy, to determine which of his forebears spent time at Bosque Redondo.

Sloan first visited the site near Fort Sumner in 1979. "When I got there," he recalled, "I was very disappointed. There was nothing to identify that Navajos had ever been there. And there was nothing that welcomed Navajos to the place."

Sloan's design plans for the memorial call for a full-scale visitors center, complete with exhibition area, library and offices. What unifies the concept is its shape: a circle, alluding not only to the original grove of cottonwoods that gave the Bosque its name but to the sacred circles in Navajo and Apache religion.

"The visitor will come from the east," explained Sloan, "walk through the memorial in a clockwise direction, then walk away, still completing the circle." On the perimeter, facing west-northwest, a statue of a Navajo family will gaze toward Mount Taylor and the Diné homeland. Facing southwest, an Apache family will stare toward the Mescalero homeland.

BECAUSE WE'LL RECYCLE OVER 200 MILLION PLASTIC BOTTLES THIS YEAR, LANDFILLS CAN BE FILLED WITH OTHER THINGS. LIKE LAND, FOR INSTANCE.

We can't make more land. But we can do more to protect what we have. In fact, this year Phillips Petroleum's plastics recycling plant will process over 200 million containers. This effort will help reduce landfill waste and conserve natural resources. And that will leave another little corner of the world all alone. At Phillips, that's what it means to be The Performance Company.

PHILLIPS PETROLEUM COMPANY PHILLIPS 66

For an annual report on Phillips' health, environmental and safety performance, write to: HES Report, 16 A1 PB, Bartlesville, OK 74004, or visit us at www.phillips66.com.

"A Navajo told me," Sloan went on, "that in some tribes, the cornfields are a place where you go to let your emotions flow through and out of you. I want this walkway to be a place to resolve the conflicts the visitor has. For many Navajos, this is still an evil place; they still harbor hatred about it. But this was also the place where the treaty was signed that gave birth to the Navajo Nation."

I drove to Window Rock, Arizona, to talk with Alan Downer, an Anglo who has served for many years as Historic Preservation Officer for the Navajo Nation. "There are still strong cultural prohibitions among Navajos about going to Bosque Redondo," Downer said. "Some of the chanters say this is the place where evil happened, and you shouldn't go back, except for some really good reason. But a lot of people here want to be involved with this memorial. It's a fairly big deal."

Downer then went on to explicate a twist of Navajo belief that jolted my preconceptions. "The Navajo Way hangs on a belief that the Navajos are given a way of living by the Holy Beings, and that there are real and nasty consequences for not living in that way. Illness, bad luck, the creek drying up—the drought last summer—all can be blamed on not living the old way. I wouldn't be surprised to find Navajos who blame themselves for the Long Walk."

Sure enough, in the oral histories gathered in a remarkable collection called *Navajo Stories of the Long Walk Period*, I found that fatalistic thread. Seventy-two-year-old Charley Sandoval, for instance, told his interviewers, "It was the Diné's own fault to be rounded up. The Diné, using bows and arrows, had been having war with other tribes." And Henry Zah, a former tribal councilman, lamented, "It was because of our own angriness."

Carson had little stomach for the roundup. He had grown sympathetic to the Indians' plight.

MANY NAVAJOS ESCAPED KIT CARSON'S ROUNDUP, HIDING out during the four years that their kin were imprisoned at the Bosque. The old-timers have stories about that, too. Said Frank Goldtooth in the 1970s, "I want to say here that a lot of people managed to avoid the march. . . . They hid in rugged areas, cliff dwellings and other places where enemies were not likely to find them."

Historians estimate that more than 4,000 Navajos escaped the dragnet. To do so meant to live in a constant state of furtive vigilance, in craggy outbacks better suited for defense than for planting and herding. For four years, these fugitives scanned the horizon every day for signs of the dreaded bluecoat soldiers.

In 1994 I spent two weeks hiking north of Navajo Mountain, on the Arizona-Utah border, near the junction of the San Juan and Colorado rivers. It was a challenge simply to travel across this landscape, tortured with humpbacked sandstone domes, slot canyons, deep alcoves and soaring pinnacles.

To this marginal paradise, a band of Navajos under Chief Hoskininni had fled, avoiding capture from 1864 to 1868. Carson trailed the band to a ford in the San Juan, waited for days for the flooding river to lower, then gave up in the face of the rugged badlands he beheld to the south.

At first Hoskininni's band scratched a living out of grass seeds and piñon nuts. The chief led sorties to round up stray sheep that the Army had overlooked, and he gradually nursed the band back to affluence. When the Navajos returned from Bosque Redondo, he sought out those in dire want and gave them freely of his band's sheep and skins and meat, earning the sobriquet "the Generous One."

Indian traders John and Louisa Wetherill got to know Hoskininni in his old age, in the first decade of the 20th century. The ancient chief was regarded by his people as the greatest of heroes. A measure of his power was that he owned 32 Ute women slaves, whom he put to work herding his sheep. Astonished at Louisa Wetherill's fluency in Navajo, the old chief convinced himself that despite her white skin, she must be a long-lost granddaughter of his. On his deathbed, he bequeathed her the 32 slaves.

By 1866, not even Carleton's rose-tinted reports could conceal that the Bosque was an utter failure. Carleton himself was fired in September, while Congress launched investigations and pondered another Navajo solution. There was strong feeling for moving the Diné even farther east, to the Indian Territory of Oklahoma, but Navajo headmen at the Bosque pleaded so passionately for return to their homeland that eventually they won the day. On June 1, 1868, the historic treaty was signed, terminating the prison camp and returning the Navajo to the land enclosed by the four sacred mountains. On June 18, they began their slow but joyous march west. They had 1,550 horses left of their 60,000 and 950 sheep of the 250,000 they had owned. At least 2,000 Navajos had died on the Long Walk and at

INVINCIBLE.

That's how you feel behind the wheel.

Remember how your spirit soared the moment you donned that cape? You felt like you could conquer the world. So it's only natural that one day you'd find yourself in a GMC Yukon. Its exhilarating 255 hp V8 delivers more power than any other sport utility.* And Yukon's Autotrac™ system** is so advanced it actually senses changing road conditions and adjusts automatically from 2WD to 4WD. So, while no one is ever truly invincible, with more power and advanced technology, Yukon can make you feel like a hero all over again.

For the big picture, visit www.yukon.gmc.com or call 1-888-4A-YUKON.
Or discover Suburban at www.suburban.gmc.com. *Excludes other GM vehicles.**Standard on 4WD models

YUKON.

GMC. COMFORTABLY IN COMMAND™

the Bosque, but the people had survived: today, the Navajo Nation is one of the most populous Indian tribes in the United States.

It seemed appropriate to travel through Canyon de Chelly, the pivot point of the Navajo resistance, on horseback, as not only Carson's soldiers had in their march that winter of 1863-64, but as the Navajo themselves were wont to travel. As Fred Blackburn, Dave Wilson and I rode down Del Muerto, the wind blew sand in our eyes and stripped the cottonwoods of their first light-green leaves of spring.

We headed for Navajo Fortress Rock, a great plug of sandstone with vertical walls, thrusting west like a small archipelago from the mesa that divides Del Muerto from De Chelly proper. The only point by which Fortress Rock is attached to the canyon rim is a sharp gunsight notch on the east, 300 feet above the valley floor.

The Navajo knew this fierce rock, and for centuries they had regarded it as an ultimate refuge; indeed, it had given rise to the legend of Canyon de Chelly itself as the people's last-ditch stronghold.

Fortress Rock goes all but unmentioned in the sketchy reports of Carson and his officers, but the Navajo oral tradition concerning it is precise and vivid. In the summer of 1863, six months before Carson would sweep through Canyon de Chelly, the Diné—anticipating the roundup—began preparing their encampment atop the thrusting fin of rock. The climb to the gunsight notch, then farther upward by a series of ledges, chimneys and cliffs, is a technical undertaking; from many places on the route, a simple slip means falling to one's death. But centuries before the Navajo, those consummate rock climbers the Anasazi had scaled the rock, leaving neatly gouged sequences of handholds and toeholds to mark their passage.

NOW THE FUGITIVES IMPROVED THE ROUTE TO ALLOW THE passage of women, children and supplies. They built a kind of wooden bridge across the notch. Near the top, two blank cliffs bar the way; to tame them, the people hauled a pair of 80-foot pines from 15 or 20 miles away, somehow wrestled these timbers up the route, propped them in place and cut alternating steps in the wood to turn them into ladders. As we rode down the canyon toward the fortress, I could see through my binoculars that those ladders still stood in place.

For weeks, the Navajos relayed tons of food—corn, beans, dried meat, piñon nuts and dried peaches—to the top. On the 25-acre summit, they erected crude dwellings, found natural potholes in the sandstone that would serve for water storage and even dug latrine trenches near the west end. By October, some 300 people had settled

Escapees on Fortress Rock steathily lowered jugs on yucca ropes to a water hole on the canyon floor while soldiers dozed below.

in on top of Fortress Rock to await the inevitable attack.

In early January 1864, Carson divided his command. He accompanied a party the length of De Chelly, while Capt. Albert Pfeiffer descended Del Muerto from headwaters to mouth. Although historical accounts vary, according to Navajo oral tradition Carson's soldiers cut down most of the peach trees, perhaps 3,000 in all, that were the Diné's pride and glory.

Atop the rock, 700 feet above the canyon floor, the 300

refugees saw Pfeiffer's 30-odd soldiers come riding through snowdrifts from the east. Teddy Draper, Sr.—Dave Wilson's uncle—later remembered his great-grandmother's story:

> All mothers, children, older people and younger people were instructed to stay quiet until the soldiers passed us. . . . From where I was they looked very small, but they were well armed and had good horses. They camped below us at the junction. Our men didn't try to attack them. The next day they moved down the canyon and disappeared.

But four days later, Carson's men spotted the fugitives. At first feeling invulnerable, the Navajos threw rocks and hurled insults down upon the soldiers. The troops dispersed the Diné with a round of shots.

Carson returned to Fort Canby with an entourage of captives, then apparently detailed a company to lay siege to Fortress Rock. No good account of this action survives in Army annals, but once again the Navajo oral tradition is eloquent. After several days the soldiers opened fire.

Twenty Navajo warriors were wounded or killed. Even before the bluecoats had come, some Diné had lost their lives, falling off icy logs and ledges as they ferried supplies up the perilous route.

Unbeknownst to the soldiers, the Navajos had reached a crisis, for no snow or rain had fallen in weeks, and their reservoirs had dried up. Some urged complete surrender, but the leaders worked out a desperate alternative.

Below the sheer north face of Fortress Rock, Tsaile Creek runs smack against the cliff a few score yards. On top, the women wove ropes of yucca fibers. Then the best Navajo climbers worked out a descent route on the north face. One night in February, they headed down in utter silence, roping a chimney here, zigzagging back and forth on narrow ledges there, until they had set up a human chain spanning the 700-foot cliff. The moon rose, threatening the enterprise, but the north side stayed dark.

From a ledge above a pair of sleeping Army sentries, a Navajo lowered one pot after another by rope, dipping and filling each in the stream. The pots were relayed to the summit through the night. Not a single stone clattered loose, not a pot was dropped, not a man fell.

As we rode past the north face, I scanned the smooth wall with my binoculars. An experienced rock climber, I could just make out a possible route, but it looked like a scary proposition even in daylight with modern gear. After that February night, their supply replenished with weeks' worth of water for 300 thirsty souls, the Navajos stayed atop Fortress Rock. At last the soldiers gave up and left the canyon. The people came down from the fortress, rebuilt their homes and lived on unmolested through the four years their relatives were starving at Bosque Redondo.

Blackburn, Wilson and I tied off our horses and circled Fortress Rock on foot. Fred and Dave lounged beside the trickling side stream in Black Rock Canyon as I started up the climb. Even the initial chimney was hard. Three hundred feet up, I came to the gunsight notch. All that was left of the bridge was a single 30-foot timber, wedged tight across a 100-foot void. Beside it, old Anasazi toeholds and handholds made a crooked staircase. My heart pounding and palms starting to sweat, I rehearsed the moves five times before pushing across the dizzy gap.

From there I followed ledges and chimneys until I was only 200 feet below the top of Fortress Rock. It seemed proper, however, to leave the summit unvisited. For an hour, I meandered from ledge to ledge, finding a cave that might hold 20 refugees, made more secure with stone walls built to guard its mouth, and, perched on the edge of the cliff, a number of breastworks—piles of flat sandstone rocks, behind which Navajo warriors may have crouched to fire their rifles and arrows.

As I paused and looked down at the grassy meadow where Fred and Dave sat chatting, the battle fought here to exterminate the Diné could not have seemed more real. From the breastworks, I could almost see the soldiers aiming their deadly Springfields.

But 80 years after his great-grandmother had risked her life to stay free atop Fortress Rock, Teddy Draper, who was born in Canyon de Chelly, had fought in the U.S. Army on Iwo Jima, and helped defeat the Japanese by serving as a Code Talker in the Pacific. And today, Canyon de Chelly belongs to the Navajo, and peach trees blossom once more along Tsaile Creek.

David Roberts' most recent book is In Search of the Old Ones: Exploring the Anasazi World of the Southwest. *Arthur Shilstone's work has appeared in many national magazines, and some of his paintings are in the collection of the National Air and Space Museum.*

This 1957 250 Testa Rossa prototype appears ready to pounce.

This Is Not Your Father's Automobile

BY BRUCE WATSON ▪ PHOTOGRAPHS BY ENRICO FERORELLI

WHEN ENZO FERRARI BEGAN HIS COMPANY 50 YEARS AGO, HIS CARS WERE WORKS OF ART. TODAY, THEY'RE COLLECTOR'S ITEMS

GETTING BEHIND THE WHEEL, I NOTICE A FEW THINGS WRONG WITH Charles Betz's car. There is no radio or tape deck. The glove compartment seems small. No airbag here, very little headroom and the clock isn't working. After I start it up, a flapping comes from the engine, as if someone were shuffling cards under the hood. But when I grip the wood-rimmed steering wheel, Betz tells me he's

not likely to sell this bright red 1062 Ferrari Berlinetta.

As we wind into a deserted Southern California canyon, the Berlinetta seems bored. It corners like a cat, holding the pavement without the slightest sway, but it begs to break 100 and howl toward 140. In my own car, an '87 Wimp Wagon, I can't go much above 65. Piloting the Berlinetta, I am learning about a particular blend of style and power known as the "Ferrari mystique." I'm sure I can't understand this mystique at cruising speeds, so I accelerate. Taking tight turns with ease, racing along straightaways, I'm starting to worry. At 70, the car hisses at me. I nudge it to 75. It grumbles for more. I push it to 80 . . . Just what will it take to satisfy this wild thing?

Infatuated Ferrari drivers have been asking that question for 50 years. Back in 1947, when most cars looked and drove like tanks, an obstinate former racecar driver named Enzo Ferrari put a heavyweight engine into a bantamweight body. Slapping his name and a prancing horse emblem on the hood, he begat an empire. Within five years, Ferraris dominated racing. Within a decade, the road models were the most coveted cars in the world.

Though only a few dozen were sold each year in this country, Ferraris soon sported a faithful fraternity of American owners. A half-century later, Ferrari's faithful are still few but devout. Each year, Ferraristi gather at hundreds of auto meets around the country. Swapping stories, talking tech, they bathe in the mystique. Many fine cars have their clubs, but Ferrari's seems close to a cult. So in this anniversary year, I set out to chase Ferraris, to learn what makes the cars and their owners run.

Memorial Day weekend: in yellow, silver and "ox-blood" red, 130 Ferraris sparkle on a golf green near Leesburg, Virginia. I had hoped to make it 131. The annual national meet here of the Ferrari Club of America will consist of races, driving lessons and judging shows, including the Concours d' Elegance. To arrive in suitable elegance, I wanted to rent a red Ferrari 550 Maranello, the newest model. The Maranello has a cool 485 horsepower. It will go 199 miles per hour. That would get me to the meet on time! But the clerk at the rental agency just stared at me. Even if they did rent Ferraris, her look suggested, I didn't seem like your typical Ferrari driver. So I took a subcompact. I drove quietly to the meet, stepped onto the green where elegance glinted in the sun and met the Ferraristi.

Like the cars themselves, the people who love them come in a bewildering array of styles. Movie stars and professional athletes are often ticketed for speeding in Ferraris. Some years ago, a Beverly Hills woman made a grim status statement when she was buried in her nightgown, seated in her Ferrari. Fortunately, most Ferraristi are more tasteful. As sports-car buffs, they spend small fortunes—from the mid-five to high-six figures—for their cars and cherish them as works of art. But all Ferrari owners fight the same stereotype. A Ferrari runs on regular gas, but many think it's powered by ego.

One sunny day in 1994, Curt Friehs started up his new used car and hit the road. It was his first drive in his 1989 Ferrari Testarossa (older models were called Testa Rossa). Within minutes, Friehs sensed he was being followed. Other cars began pulling alongside him, then dropping back. Some drivers honked. Others waved. A few gave Friehs the thumbs-up. One flashed him just a finger, then roared off. Driving any other car down rural Pennsylvania roads, Friehs would have been anonymous. But in a Ferrari, he stood for everything people love and hate about cars and status. "Ferrari owners are supposed to be the guys with

P. 59 HULTON GETTY TONY STONE IMAGES

Restoring Ferraris is a labor of love for Charles Betz and his bewhiskered partner, Fred Peters. Clockwise from opposite, top: They display engines in different stages of renewal; Peters puts a radiator into a 1959 Pininfarina coupe while Betz assists; Peters fits a headlight for installation in a 1953 225 GT Vignale, and sizes up a 1949 212 Mille Miglia Berlinetta coupe.

the trophy wives, the gold chains, the whole 'Magnum P.I.' image," says Friehs, who has neither gold chains, a trophy wife, nor a Magnum P.I. resemblance. "It takes some courage to buy a car like this. It would be much easier to buy a cottage on a lake and not have everyone think you're weird. But Ferraris are just so much fun to drive."

Of some cars, the less known about them, the better. My own Wimp Wagon, for instance. But the more you know about Ferraris and the man who gave them his name, the more you understand the mystique. Behind every singular car is a name. Ferdinand Porsche, Ferruccio Lamborghini, Charles Rolls and Henry Royce—each stamped his surname on a classic. But no name roars through automotive history like that of Enzo Ferrari.

As a young boy, with bulbous eyes and a Roman nose, Enzo awoke each morning to the ring of hammers on metal. His father owned a machine shop in Modena, Italy, and the Ferraris lived above it. When Enzo was 10, his father took him to an automobile race. The year was 1908. The place was Bologna. And the average speed of the winning car was 74 mph. For the rest of his life, Ferrari remembered the daring drivers thundering through the streets. He had wanted to be an opera singer but lacked the voice. He toyed with the idea of becoming a journalist, but his dream of racing would not let him rest. After shoeing mules for the Italian Army during World War I, he left Modena to look for a job in Turin's auto industry.

Ferrari quickly proved willing to take any vehicle down any road. His first job was driving open trucks, skeletons stripped to their chassis, from a garage in Turin to a body shop in Milan. Soon he was driving the length of Italy to enter races. There were few if any Italian racetracks then. Rutted roads made for carts and mules were standard. Careening around mountain curves, tearing through sepia-toned towns, Ferrari was the very model of a dashing driver. Once, during a blizzard in the Abruzzi hills, his car was surrounded by wolves. He drove them off with a pistol he kept under the dash. In another race, police made him wait on a public road until Italy's president had finished delivering a speech. After the speech, Ferrari was forced to putter along behind the president's entourage before making a dash for the finish line. At 22, he joined the racing team of one of Italy's top automobile companies, Alfa Romeo, and won several national races. Yet his daring was tempered by one fault. "I drove always with consideration for the car," he admitted, "whereas to be successful, one must on occasion be prepared to mistreat it."

In 1929, Enzo created the Scuderia Ferrari, "Ferrari's Stable," where his team prepared Alfa Romeos for racing. Three years later, when his son was born, Ferrari quit racing and turned his attention entirely to the cars. He had completed only three years of grade school and a few of technical school, but his cars soon set speed records, with one topping 200 mph. Ferrari broke away from Alfa Romeo in 1939, but eight years and a world war would pass

A grid marshal gives a driver the "OK" to hit the track during the annual Ferrari Club of America meet.

before he issued cars under his own name. In 1947, the Ferrari name and the *cavallino rampante*, the prancing horse symbol he'd been using for years, became forever inseparable. The first Ferraris looked like loaves of bread with wheels. But each had an ace under the hood. "I had always liked the song of 12 cylinders," Ferrari recalled. And so, while most racecars had four, six or eight cylinders to turn spark plug explosions into power, a Ferrari had a dirty dozen. Today, most Ferraris still sing this song. Their roar has been described as "the sound of ripping canvas," "instant bedlam" and, at 6,000 rpm, "a spine-chilling howl." As much as the horse on the hood, the "song of 12 cylinders" remains Ferrari's trademark.

The first Ferraris never finished their first race. One went off the road during practice; the other was in the lead when its fuel pump malfunctioned, forcing it out of the race. But the loss was soon avenged. Within weeks, in May 1947, a Ferrari won the Gran Premio di Roma. In 1949, Ferraris won at least 30 races, including the 24-hour contest at Le Mans, and six grand prix. By then, Enzo had decided to make a precious few road cars to support his racing team. That same year, as Detroit churned out five million cars, 20 handmade Ferraris were sold in the United States.

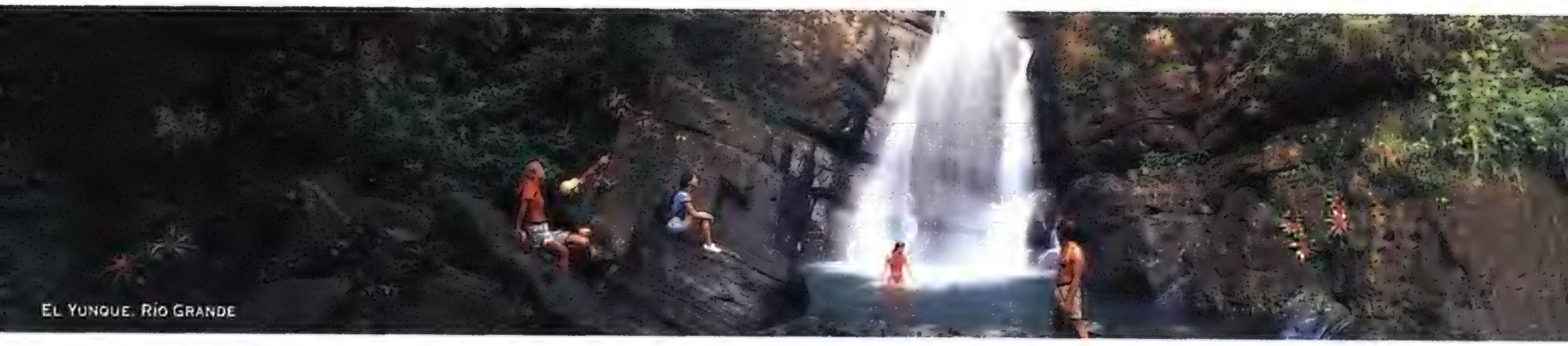
In the industry that pioneered the assembly line, Ferrari made cars one at a time. The pace fit a prima donna's personality. Temperamental, stubborn and aloof, Ferrari was obsessed with winning races; he cared nothing about winning friends. As if powered by 12 cylinders himself, he exploded in fury at drivers and designers. In his factory, there was one way to do things—his way. Racing was Ferrari's passion, but he rarely went to the races. He believed his cars had a "living, breathing soul." Watching them get torn apart on the track "makes a man suffer, here," he once said, putting his hand over his heart. Even as his cars became emblems of the jet set, Ferrari stayed close to home. As a senior citizen, he could corner a Ferrari at frightening speeds, but he rarely rode trains and refused to step in an elevator. He took no holidays and hardly ever left Italy. For years, he was haunted by death, making daily visits to the grave of his son Dino, who died of nephritis at 24. The Italian government honored him with such titles as Cavaliere and Commendatore. The Italian people, noting his power and charisma, called him "the Pope of the North." He preferred to be called just Ferrari.

Throughout the 1950s, visitors to the Ferrari factory were surprised to see teams of artisans crafting cars by hand. Back then, only 70 to 80 Ferraris were made each year. Crankshafts were sculpted from solid steel. Engine blocks were cast like statues. Fenders were hammered into shape over tree trunks. Ferrari hired Italy's top automobile designers and coach builders, whose names—Vignale, Pininfarina, Scaglietti—were as elegant as their sculpted fenders. They

PUERTO RICO!

MUCH MORE THAN 300 BEAUTIFUL BEACHES

THE LARGEST FORTRESS IN THE CARIBBEAN



THE ONLY TROPICAL RAIN FOREST IN THE U.S. FOREST SERVICE

AND AN EXCITING NEW WORLD

Puerto Rico is full of wonderful surprises: 500 years of history, incredible natural wonders, a vibrant economy and modern resources.

For more information, call **1-800-866-7827**, reach us on the Web at **http://www.discoverpuertorico.com** or just ask your **Travel Consultant** about all the wonderful sounds of Puerto Rico.

PUERTO RICO USA

ONLY PUERTO RICO PUTS IT ALL WITHIN YOUR REACH.

"The noise, the styling, the leather straps holding down the hood. It blew me away. I just had to have one."

dressed Ferraris in silken shapes, making the cars the talk of Europe's prestigious auto shows. Meanwhile, their cars were tearing up racetracks. In 1952, Scuderia Ferrari entered 109 races and won 95. Ferraristi still trade stories of those early and astounding victories. There was the time a Belgian driver, angry at Ferrari because his 250 GT leaked water when it rained, decided to abuse the car in Italy's prestigious Mille Miglia. Careening over roads in the 1,000-mile race, he spun out several times, slid into a gravel pile and played chicken with trains at 150 mph. The driver got little revenge. His Ferrari, battered and bruised, took first in its class, fifth overall behind four other Ferraris.

Given such success, what less than a gorgeous Ferrari would befit the lifestyle of the rich and famous? The Shah of Iran drove a Ferrari. Ingrid Bergman owned one. So did Egypt's King Farouk, Aristotle Onassis, even Fred Peters. Fred Peters teaches at a local college, occasionally walks with a cane and generally seems built more for ambling than for speed. But ever since he was a boy, Peters has been fascinated with cars. In the early 1950s, he owned several small, plastic Ferraris, mere models. No son of a construction foreman could dream of owning a real one. Then one day when Peters was working with his dad, the son of a family friend pulled up in a new Ferrari 250 GT LWB-TDF. "I couldn't get over it," remembers Peters, now 65. "The noise, the styling, the leather straps holding down the hood. It blew me away. I just had to have one."

A few years later, Peters met Charles Betz. The two shared more than a love of Ferraris. Growing up in car-crazed Southern California, each had tinkered with hot rods. Diving into engines, they had cultivated an esthetic appreciation of engineering. As fledgling college professors—Peters in psychology, Betz in economics—each had scrimped to own a used Ferrari. They formed a partnership, hocking furniture and borrowing from loan sharks to buy used models. They repaired others that, because there were few Ferrari manuals until 1968, couldn't be reassembled by ordinary mechanics.

Working in dimly lit garages late into the night, the two discovered Ferraris to be as wild on the rack as on the track. Like the racers, road Ferraris were built to run for just a season or two. Head gaskets blew with alarming frequency. Valve guides, made of soft copper with the needs of racing in mind, lasted just 3,000 miles. And just try to find Ferrari parts in a market dominated by Detroit. Still, Betz and Peters marveled at the artistry that fell into their hands. Delicate bodies, their curves caressed into shape, could be dented by an elbow. Doors and trunks closed not with a crunch but with a click. "The cars we worked on represented the zenith of the artisan period of automobiles," Peters tells me. "Every one was different, and from each we learned something new."

In 1967, Betz and Peters went shopping in Italy. They came back with Ferraris, including one that had belonged to Sophia Loren. Then, they acquired a car once owned by Belgium's Princess Liliane, with a custom curve in the dashboard to fit a champagne bottle. They kept horse-trading. By this time, Ferraris were the height of chic. Buyers in this country were signing onto 18-month waiting lists for some models. Auto magazines drooled over them. Ferrari's state-of-the-art engine, with its 12 brawny cylinders, was "the greatest automotive engine in the world," car magazines said. But brawn was not every driver's dream. Many first-time owners, expecting elegance for their money, were insulted by a Ferrari's raw power. "We used to joke that if we could just put a Ferrari emblem on a Cadillac, we'd have more satisfied customers," Betz recalls.

At first, I don't get the joke. Then Betz and Peters take me to their garage. There on an ordinary street in Orange, California, stands a two-man Ferrari auto works, spread over three garages. Huge engine blocks and elephantine brake drums make one work area look like Paul Bunyan's auto parts store. And gleaming on the slick concrete is one finished

Judges check out an immaculate F40, created for Ferrari's 40th anniversary in 1987, during the Concours d'Elegance at the annual meet near Leesburg, Virginia.

HOW NICOTINE CAN HELP FREE YOU FROM NICOTINE.

When you smoke,
nicotine goes right to your lungs
and then to your brain.
And the more you smoke,
the more you want it.
When you want to stop smoking,
and you chew Nicorette® gum,
you get just enough nicotine
into your bloodstream
to help you cope with your cravings.
You don't get the dangerous tars,
and toxins and carcinogens
you get from cigarettes.
And your cravings get fewer and fewer.
And the less Nicorette you need
the less you use.
Until you use none.
And none is a wonderful number.

PARTNERS IN HELPING YOU QUIT
AMERICAN CANCER SOCIETY

www.nicorette.com

YOU CAN DO IT.
Nicorette can help.

Use as directed. ©1997 SmithKline Beecham Consumer Healthcare.

product—a 1962 SWB Berlinetta. Red, waxed, with buxom hood and curvaceous trunk, the car looks like something out of a movie. It isn't the 275 GTB Steve McQueen drove in *The Thomas Crown Affair*. It is more muscular than the sleek Ferraris in *The Pink Panther*, *Scent of a Woman* and dozens of other films. Even to my untrained eye, it is a Titian on wheels. Acknowledging my admiration, Betz asks: "Like to go for a ride?"

David Sydorick shows off his 1947 Spyder Corsa, the first car sold under the Ferrari name.

We slip in, Betz behind the wheel and I in the tan leather passenger seat. With a turn and push of the key, the car grumbles and comes to life. We pull out of the driveway. Suddenly the suburban Orange County streets where I'd grown up seem like the Via Veneto. Down past taco stands and strip malls, we drive the ultimate in automobiles. Heads turn. Strangers wave. I want to drive by the homes of certain people I knew in high school, honk the horn and smile, ever so slightly. But Betz takes the car into a nearby canyon, pulls over and hands me the keys. And then, still curious about the Ferrari mystique, I succumb to it.

No sooner am I behind the wheel than I begin imagining this to be *my* Ferrari. My Ferrari holds each corner as if riding a fixed rail. I take my Ferrari past boring speeds, to 80 and beyond. My Ferrari is still in third gear. The slightest tap on the accelerator puts me and this other guy back in our seats. "You know," Betz tells me, "there were only 167 of these cars made." I wonder just how much my Ferrari might be worth. I accelerate cautiously. At 85, I begin to feel what makes Ferraristi's eyes glow. Only as it approaches 100, I'm told, does a Ferrari warm up. But even now, I feel its steering tighten. Its hood hunkers down. And the engine, which had sounded like heavy-metal music, begins to sing Enzo's song. I realize why the Italian word for driver—*pilota*—is the same as the one for pilot. In another few seconds, my Ferrari could have taken flight. "The Ferrari is such a fast car," Bill Cosby once joked, "that when you buy it they automatically give you 12 speeding tickets." As the road whips past me, so do thoughts of my family, my life, my driving record. Unwilling to risk them, I slow my Ferrari. I cruise along at a lazy pace, then pull over. My Ferrari shudders, kicks, and sleeps. "So how much is this car worth?" I ask. Betz pauses. He seems annoyed, like an art lover troubled by monetary questions about a masterpiece. "Oh, somewhere above a half-million," he says. I hand him the keys to his Ferrari.

Betz and Peters have owned more than 100 Ferraris. Their current collection is one of the country's largest stables of early models. But although they find every Ferrari special, their favorite is their 1957 Testa Rossa (pp. 58-59). It had been damaged in a fire when the two bought it and restored it lovingly, piece by piece. I dare not dream of driving it, but when I ask the common questions—"How fast will it go?" "How much is it worth?"—Betz answers with a story, slow and meandering.

In 1994, this Testa Rossa—an original factory prototype—had just won its class at a Concours d'Elegance in Monterey, California. To celebrate, Betz and his wife drove it along the 17-mile coastal drive just outside Carmel. It was a perfect morning—clear sky, ocean breeze, cool, pleasant. Betz never took the car over 60. He did not think about how much it was worth. But somehow that drive, with the pine trees reflecting in the hood and the car's rippling engine echoing off the rocks, captured everything elegant about automobiles. "That was about as great as it gets," Betz remembers.

Owning a car that owns the road is like keeping a pet cheetah. You rarely get to put it through its paces, but you feel good just knowing it's there. The Ferrari mystique is not fueled only by speed or status. It also runs on an ideal, the one printed on Peter Colletti's baseball cap. Back on the green at the Ferrari Club of America meet, Colletti's cap reads "Priorities." "I remember as a teenager chasing some guy in his Ferrari just to get a look at it," Colletti says. Now he drives his own Ferrari to meets around his home near Chicago. But for the Virginia meet, Colletti did more than drive. At the Concours d' Elegance, Ferraris are held to standards as exacting as Enzo's own. To receive a top platinum award, a Ferrari must be in perfect condition—spotless, fully operating, with all original parts. Even the car's pedigree papers, the original registration, must be presented upon request. In preparation for the Concours, Colletti spent weeks micromanaging his car. Now, as the judges pick over it, he frets and hopes. For a moment, the judges think they have him. Their inspection turns up a missing "trouble light." But Colletti has the light in the glove compartment. That afternoon, when the Concours

Photo by Beatriz Schiller
SEDUCTION. BETRAYAL. MURDER.
SEE THE METROPOLITAN OPERA AT ITS BEST.
BIZET'S
CARMEN
Monday, December 29th, 8pm ET on PBS
Check local listings. Stereo simulcast in many areas.
Conducted by James Levine
Waltraud Meier • Plácido Domingo • Angela Gheorghiu • Sergei Leiferkus
Special funding for this program is provided by Mrs. Donald D. Harrington.
A WORLD OF ENERGY℠
SEE IT ON PBS
© 1997 Texaco Inc.
Visit the Texaco web site: http://www.texaco.com

The legendary Juan Manuel Fangio puts a Ferrari through its paces before a race in Italy in 1949. In 1956, while driving for Ferrari, he won his fourth world championship.

results are announced, Colletti takes home a platinum.

The Concours explains why a Ferrarista and his money are soon parted. As with a sailboat, the sticker price on a Ferrari is just the ante. To keep a Ferrari authentic requires original parts—and they are hard to come by. Need the smog pump for a Ferrari Daytona? That will be $1,750, please. How about rear wheels for your F40? A mere $3,000. Got some scratches on the hood? A full restoration paint job for a vintage Ferrari *starts* at $15,000. Then there are souvenirs—Ferrari luggage, golf bags, driving gloves. At the "Mercado"—the collection of vendor exhibits at the Ferrari meet—a number of booths feature toy Ferraris. Many Ferraristi, unable to own more than one of their dreams, collect dozens of these miniatures. I want to get my 2-year-old son his first Ferrari, albeit a small one, but I can't afford it. Any other model car might cost a few bucks, but a Ferrari you can hold in your hand can easily cost $220. My son will have to save for his own.

When Enzo Ferrari died in 1988, his 90 years spanned the entire history of auto racing. His cars had won some 5,000 races, earning more than 25 world championships. In Italian, *ferrare* means "to bind with iron," and Enzo remained iron-willed until the end. He still gave annual press conferences, and kept everyone, even the Pope, waiting hours to see him. By the time of his death, Ferraris were no longer winning every race in sight. In this golden anniversary year, however, Ferrari came roaring back, making a serious bid for a World Drivers' Championship for the first time since 1990. And on the street, Ferraris continue to turn heads.

The factory now makes 3,500 cars per year, a number Enzo thought too many. "A Ferrari should be longed for and dreamed for," he said. "You should have to wait for one like you wait for a star." The names of about a hundred Ferraristi are on a waiting list for the new 550 Maranello. At the Virginia meet, a sleek Maranello stands on the lawn. The car, which former world-champion driver Phil Hill called the best road car Ferrari ever made, can go from zero to 60 in 4.3 seconds. And it can be mine for just $204,000! I check my wallet. I have a slight cash flow problem. But just before going home to my Wimp Wagon, I spot a Ferrari for the rest of us.

Andrew Bass' Ferrari is not red. It does not have a wing on the trunk or a body like a bullet. Bass drives a blue Ferrari 412, a sedan. These are family Ferraris, with four seats and a trunk big enough for luggage. If the family is in the mood for fun, the 412 can top 150 mph, but Bass drives at sane speeds. "I'm the exception to the rule," he says. "I don't polish my car every day. I just want to drive it." Others at the Virginia meet had their cars trucked in on trailers; Bass drove his down the turnpikes from his Massachusetts home. Maybe this can be my Ferrari.

"Tell you what," I say. "I'll trade you my car for your car. Mine's ten years old but it gets great mileage."

Bass doesn't bat an eye. "What else will you throw into the deal?"

"My house?"

"Now you're getting close."

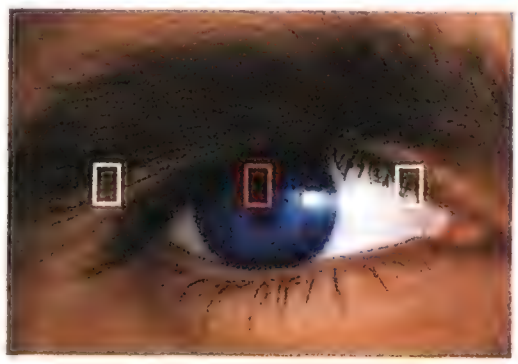
I have nothing else to offer, so I head home without a Ferrari. But as I drive, I notice that the mystique is still with me. Crafty old Enzo has changed the way I look at cars. Suddenly, almost every car coming down the road toward me looks like it is trying to be a Ferrari. I've never noticed so many bright red cars, so many with spoilers and scoops and other sleek styling. I begin to look differently at my own vehicle. Why don't its doors close with a click? Why don't strangers wave and honk as I pass? Why is my car shaped like a box instead of a bullet? Fifty years after Ferrari put his name on cars, the mystique lives and is contagious. "La Ferrari is the living expression of my dreams," Enzo said. "A car is a rather beautiful and fascinating thing. It is because of that, and because there is no perfection but only evolution, that I continue to dream." And so do Ferraristi, those with and those without a Ferrari in the driveway.

After scrimping and saving, Bruce Watson is now the proud owner of a Ferrari coffee mug. Enrico Ferorelli, lover of all things Italian, recently photographed retired musicians at Milan's Casa Verdi.

HULTON GETTY/TONY STONE IMAGES

ELAN IIE WITH EYE CONTROLLED FOCUS. WHEREVER THE TRAIL LEADS, IT'LL FOLLOW.

The EOS Elan IIE focuses on whatever catches your eye – cowboy on the left, lasso dead center, or those flaring nostrils on the right. Only Canon's exclusive Eye Controlled Focus delivers such unbridled freedom. To boot, it does so instantly. To focus, the only muscle you move is in your eye. Hold it vertically. Hold it horizontally. There's never a need to center and recompose. And when it comes to lenses, Canon leads the pack with more than 50 state-of-the-art EF autofocus lenses. With a Canon EF 28-80mm lens package, Elan IIE hands you the kind of shots that leave knock-off lenses in the dust. No matter how you look at it, the Elan IIE always looks good.



Save with the
CASH IN WITH CANON REBATE
thru 12/31/97. See your authorized dealer for details.

EOS ELAN IIE
Canon
So advanced...it's simple.

©1997 CANON U.S.A., INC. CALL 1-800-OK-CANON OR VISIT US AT HTTP://WWW.USA.CANON.COM ON THE WEB

This dune in West Texas is moving from right to left as the wind blows from the right. Sand avalanches occur when the smooth slope, the "slip face," becomes too steep.

WILL THE DUNES MARCH ONCE AGAIN?

BY DANIEL JACK CHASAN ◆ AS RECENTLY AS 200 YEARS AGO, DUNES AND SHEET SAND WERE ACTIVE THROUGHOUT THE GREAT PLAINS. A SERIOUS DROUGHT COULD BRING THEM BACK ◆ PHOTOGRAPHS BY ADRIEL HEISEY

OUT IN THE MONAHANS DUNES, 1,400 SQUARE MILES OF blowing sand in West Texas and New Mexico, clumps of pale grass grow in the hollows, but up on the dune crests the wind has whipped pure sand into shallow parallel ridges and grooves, making the swelling dunes look like lobes of a giant brain. On the steep slip faces of the dunes, the furrows have been erased and the sand is smooth. Shadows cast by sand on sand, with no other point of reference, make this landscape seem lunar. At shallower angles, before the wind sweeps it clean, the sand holds every print: mule deer tracks weathered to abstraction; parallel lines of elegant little one-inch fleurs-de-lis where a bird has walked; pairs of tiny footprints at improbably wide intervals made by a kangaroo rat.

In the heart of Monahans Sandhills State Park, west of Midland and Odessa, not far from the New Mexico line, park headquarters rents bright plastic disks and boards so visitors can surf down the dunes. From the crest of a dune, you can see an oil well pump and hear the hum of semis on Interstate 20. But down in a hollow surrounded by dunes, there is no sign of an outside world. Climbing a steep dune, all you see is the wall of sand in front of you, the clean, curving outline of bare sand against the blue Texas sky.

Zebulon Pike was evidently impressed by a similar landscape when he traveled through the Great Plains between 1805 and 1807. "These vast plains of the western hemisphere," Pike wrote, "may become in time as celebrated as the sandy deserts of Africa; for I saw in my route, in various places, tracts of many leagues where the wind had thrown up the sand in all the fanciful form of the ocean's rolling wave, and on which not a speck of vegetable matter existed."

One hundred fifty years ago, the plains were often referred to as the Great American Desert, but both the name and the concept died out in the later 19th century. Parts of the plains might be semiarid, but people moved in, raised cattle, planted crops, founded towns and cities. For generations, people have assumed that Pike and other early explorers were exaggerating, misconstruing the nature of the grasslands or telling tall tales to the gullible East Coast public. The Great Plains might be a harsh landscape, capable of freezing winters, scalding summers and occasional droughts, but they were not a desert.

Left: Seen from 600 feet up, active dunes, bottom, are sharply demarcated from vegetated sand, top. Above: Heliotropes rise out of the shadow of a dune crest.

Now, it turns out that Zebulon Pike may not have been so far off the mark. Geologists who study the plains are concluding that within the past thousand years, and possibly within the past few hundred, sand drifted across parts of the plains from Texas to Manitoba—and that with a very modest change in climate, sand may drift over those places again.

Pike wasn't the only explorer who found a Saharan landscape on the plains. Col. Richard Irving Dodge wrote in the 1870s that he had encountered "sand streams." Reported Dodge: "The ground covered varies in width from a few yards to thirty or more miles. Sometimes the sand is piled in oval or conical hills, from ten to 200 feet in height; at other times it seems to cover the ground . . . in an almost level mass. . . . the sand is so light as to be the sport of every wind. It is in color from bright yellow to pure white, and the particles of fine sand are so very minute that a handful thrown into the air disappears entirely." James Mackay, who visited the Nebraska Sand Hills in 1796, described a "great desert of drifting sand without trees, soil, rocks, water or animals of any kind, excepting some little varicolored turtles, of which there are vast numbers."

Although many journals of the period say nothing about sand, most travelers avoided areas of dunes and sheet sand. In West Texas, the Monahans dunes are still active. A little northwest, just over the New Mexico line north of Kermit, a driver encounters red sand among the grass and mesquite, and bare dune crests; a highway sign warns of drifting sand. East of Roswell, in sight of the flat crest and deep, fluted battlements of Mescalero Ridge, one finds more bare sand. On the surface, a smooth line flanked by footprints marks the route along which some little rodent has dragged its tail through the sand; a

Left: Cattle tracks lead across a bare patch to a water hole in the Nebraska Sand Hills. Above: Geologist Dan Muhs digs into a dune above Nebraska's Snake River.

lighter, cleaner line, the mark of every scale seemingly visible, indicates where a snake has passed; and the tracks of a small mammal stop forever where a swath of sand has been swept smooth, apparently by the wing of a large bird. The sensual, swelling, perfect curves of a cold, lifeless medium create a landscape that could have been sculpted by Brancusi.

In northeastern Colorado, Gene Kennish can look northwest from the door of his shop and see a growing "blowout" of bare sand on the side of Sitting Bull Hill. In the 1920s, when he was a boy living on his grandparents' ranch just north of here, he looked for arrowheads while he rode horseback across the prairie to fetch the cows. After every strong wind, he and his grandmother would harness up the sulky and ride out to Sitting Bull Hill, where the wind always shifted enough sand to uncover a new batch of arrowheads.

There are sand dunes and flat, relatively thin layers of once-windblown sand all through the Great Plains. Dune fields of varying sizes can be found not only in Texas, New Mexico and Colorado, but also in Wyoming, Kansas, Oklahoma and the Dakotas. The Nebraska Sand Hills, north of the Platte River, make up the largest dune field in the Western Hemisphere. They can't compare with the great deserts of North Africa or Saudi Arabia, but covering 19,000 square miles with dunes up to 400 feet high, they dwarf any other dune field in North or South America.

Most of the sand is blanketed, however sparsely, by grass or sagebrush or yucca, and since the advent of center-pivot irrigation, some has even been plowed and planted in corn or other crops. Between the active dune fields at the climatic extremes of the plains, in Texas and on the Canadian prairie, there is not much sand being blown today. Until recently, people assumed that the dunes that are there now had not been active since the end of the last ice age, 10,000 years ago.

This was a plausible theory. Fertile deposits of windblown silt called loess, which are found downwind of the Nebraska dunes, clearly were deposited during the last ice age. Look at the thick loess deposit southeast of North Platte, Nebraska; a dark layer of buried soil near the bottom of the loess and a dark layer of buried soil at the top have both been carbon-dated, neatly bracketing the age of the deposit at 12,000 to 28,000 years, about the duration of the last glacial period. The same winds that blew the loess southeast, the theory went, also blew the coarser grains of sand into the Nebraska Sand Hills. The loess, being lighter, traveled farther. The sand did not make it quite as far.

TO U.S. GEOLOGICAL SURVEY GEologist Dan Muhs, who has spent the past several years studying the history of Great Plains dunes, that theory never really did make a lot of sense. How could the wind have left such a clear border between sand and loess? How do you explain the accounts by explorers in the late 1700s and early 1800s, and by military officers looking for a transcontinental railroad route, reporting blowing sand? And how do you explain the results of more recent carbon dating of soils found buried in the dunes? The answer, says Muhs, is that the sand has moved in historical times.

There is Muhs, standing up to his ankles in sand on a steep dune face far above an oxbow of the Snake River in Cherry County, Nebraska, near where Mackay found sand and turtles in 1796. Down by the water a band of pale rock looks finer-textured and yellower than the sand in which he stands. The yellowish layer is the Ogallala Formation, the cemented sediments that underlie virtually all the high plains and that contain the plummeting Ogallala aquifer, which provides the irrigation water that sustains agriculture on the plains from North Dakota to Texas.

Standing on that slope above the oxbow, Muhs points toward the Ogallala Formation just above the greenish water. Above a first dark layer of 4,000-year-old soil lie three more soil layers separated by relatively thin layers of sand. Beyond the fourth soil layer is nothing but sand, 30 or 40 feet of it rising to grass and yucca and finally blue sky. That topmost soil layer has been carbon-dated at 2,700 years. In other words, sand drifted across it and buried it less than a few thousand years ago. The sand may have been drifting much more recently than that, Muhs says—it may have been active within the past few hundred years—but there's no way to know. He and his colleagues have used buried soils, buried bison bones and buried Native American artifacts to date dunes all over the plains. The most recent dates are less than a thousand years. They have concluded that in the Sand Hills—as in the rest of the Great Plains—dunes were active within the past thousand years.

Whenever the sand arrived, in different parts of the Great Plains, it has clearly come from different places, although it all originally was moun-

tain rock ground into sand by glaciers, weather and plunging streams. In eastern Colorado, the dunes and sheet sand can be traced to Pikes Peak and other mountains of the Front Range, from which particles were carried by the South Platte River and its tributaries. The Nebraska Sand Hills themselves contain some Colorado particles and many Wyoming particles, some or all of which may have been carried by the North Platte.

Today, it's hard to imagine great seas of sand being blown from the beds and margins of either the North Platte or the South Platte. Both are modest streams, hemmed in by thick brush and trees, flowing all year around. But, Muhs explains, the natural rivers were much different: they were broad, shallow streams with multiple, braided channels and virtually no vegetation. Every summer they dried up, and every spring, when snow melted in the Rockies, great floods scoured the channels, preventing vegetation from getting a toehold.

Muhs and other geologists don't know exactly how all that sand wound up in the Nebraska Sand Hills. But they're sure that it hasn't been long since the kind of Saharan landscape that Pike and Mackay described covered much of the plains.

Perched on the steep dune above the 2,700-year-old soil, Muhs uses a short-handled shovel to scrape away a clean vertical face. Where a layer of lighter sand and a layer of darker sand meet, he finds a series of undulations, each dip about the width of a human palm. These are bison tracks, Muhs says. Each dip was made by a bison's hoof. Unfortunately, the tracks can't be dated. Bison bones can be. Muhs says he gets excited whenever a rancher tells him he has found bison bones in the sand. But almost invariably, when he asks the rancher where the bones are, the rancher replies, "In my garage."

Left: Greenery binds the fragile surface of a Nebraska ranch after soaking rains. Above: In Colorado, rancher Brad Peterson straddles a partially buried fence.

The date at which the dune fields last were active has practical significance. If the dunes haven't been active since the last ice age, then the conditions necessary to start sand blowing across the plains existed only in a much different climate. But if the dunes have been active in the past few hundred or even past few thousand years, then the conditions have existed in modern times—in a climate not much different from that of today. A change in temperature and rainfall well within the range of historical variation (which has included much wider climate swings than we've seen in the past 150 years), and certainly within the range predicted by some models of global warming, could start the dunes blowing again.

This would be more than just visually disconcerting. The dunes cover a lot of ground. If they became active again, ranchers could no longer graze cattle on their crests. Drifting sand could migrate onto the fertile farmland downwind. Sand could alter the courses of rivers. It could obliterate roads and interrupt travel on the major east-west highways. Many square miles of the central United States could become virtually inaccessible.

What would it take to make this happen? In parts of the plains, winds blow hard enough to move sand particles more than half the time. All they need is enough drought to liberate the sand from that tenuous layer of vegetation.

ACTUALLY, DURING THE 1930S, dunes started going active all through the Great Plains. Clouds of finer-grained soil that blew all the way to the Atlantic captured people's attention, but the sand was moving, too. Muhs says he hadn't believed that there had been much dune activity during the 1930s until he started looking at aerial photographs taken at the time. The photographs make it clear that in dune fields all over the Great Plains, dune crests were going bare.

The parched growing seasons of 1933 and 1934, when housewives in eastern Colorado hung wet towels over windows to keep the dust out and farmers burned the spines off cacti so that their cattle could eat them (most of the cattle died anyway, from balls of dirt in their stomachs), were followed by flooding in 1935. In 1934, Gene Kennish says, holding his hands a scant two feet apart, "I had a nice crop of beans about this high, and every day"—he moves his hands closer and closer together—"they just shriveled. The next year, the field was underwater." That's when Kennish quit farming for good and went north to work construction on the Fort Peck Dam in Montana.

The weather continued to oscillate in a pattern common to that part of the country. The drought of 1936 was also followed by rain. If the dry years of the 1930s hadn't been followed by unusually wet ones, Muhs says, who knows what might have happened? Over a period of years, the average rainfall in the plains is usually high

enough to keep vegetation on the dunes. But actual rainfall varies widely from year to year. In a dry year, parts of the plains are downright arid. Put a string of dry years together and the sand might start to move.

An increase of two to five degrees Fahrenheit in average temperature, projected by some climate models, might do it nicely. Dennis Hartmann, an atmospheric scientist at the University of Washington, explains that the plains might become drier, because in a warmer climate, snow would melt earlier in the spring and the water derived from melting snow would be more likely to evaporate before the end of the growing season. If this happens in the dunes and sheet sand, large areas could look much like the Sahara.

Even now, the vegetation maintains a fragile grip on much of the sand. One often sees the white patches of the blowouts in the sparse grass along fence lines where the hooves of cattle walking along the fences have worn away everything but bare sand.

On a hill in eastern Colorado, Brad Peterson, manager of the Lost Creek Land and Cattle Company, looks down toward a green tractor that's tilling corn stubble in a sandy field. Muhs asks Peterson about the fenceline blowouts. "Of course," Peterson says, "the rancher has driven his pickup there, checking the fences, and the cattle walk in the tracks. We shouldn't take pickups in there at all, but I'm not about to fix fences on horseback." If someone does drive a pickup across sand hills, Peterson says, he should at least avoid driving in the same wheel tracks twice.

Peterson jokes that farming in the sand hills is just hydroponics—putting seeds together with water and fertilizer without any organic soil—but his company does it in several places, and by and large, he likes it. You don't have to wait a week after a heavy rain to run machinery across the fields, he says, and you can get fine yields; his cornfields average 164 bushels an acre and have produced more than 200. Still, the sand forms an unforgiving environment. Peterson allows 20 acres for each cow and calf, and he rotates a herd frequently from one field to another.

AND HE KEEPS THE GROUND COVered. That's why so much vegetative debris has been left on the field just below and why the green tractor is tilling directly in the stubble. Peterson says that if he plants beans on one of these fields as a rotation crop, when harvest time arrives, a tractor comes in right behind the combine, planting a cover crop of rye. When some people leased part of this land for sugar beets, he says, the lease required them to spread at least 20 tons of manure per acre to hold the soil until the beets got established. Trucked all the way from a feedlot, the manure was relatively expensive, but it was the price of growing sugar beets in sand.

Peterson says that a previous owner leased the land to a farmer who grew potatoes, beans and sugar beets. After one harvest, he just left the fields, and the inevitable happened; sand started to blow. It covered a big irrigation pump that stood chest high. "They had a perfectly good four-wire fence and the sand buried it. They built a new fence on top of the old one, and the sand buried it, too."

But Peterson has never seen a sand blowout quite as bad as the one a group of investors has perpetrated a bit farther north. There, not far from the Interstate, a straight, well-graded dirt road follows the county line due north, but a driver who starts to follow it quickly encounters a big "road closed" sign. A bit down the road, one of the investors plowed up the sand and planted winter wheat. "He never should have planted there,"

Left: In a makeshift solution, tires hold down sand along I-76 in Colorado, but they retain too much heat for vegetation to take over. Above: Sand-blasted sign warns motorists.

Peterson says. "There's no water." But he did plant. Now, his place is notorious in a wide area. And no wonder: the wind has blown a lot of sand off his plowed field. By now, the sand has drifted across the road, burying a four-wire fence to the second strand, to the third strand, to the top, spilling over onto the rangeland east of the road, where it has started to kill the grass. On parts of the road, the sand is so deep that even with a four-wheel-drive vehicle, a motorist would be taking his chances. In the drifted sand, one sees the undisturbed tracks of a coyote. This is just sheet sand, Muhs says. Think what a whole dune field could do.

Later, driving west on Interstate 76 toward Denver, Muhs passes a sand blowout that has half covered a green steel ranch gate and drifted toward the westbound lanes. All along the edge of I-76, sparse grass, sagebrush and the occasional garden of old tires barely hold the sand in check. "If that sand ever starts moving," Muhs says, "this Interstate is history."

Daniel Jack Chasan has written for this magazine since 1971. Adriel Heisey photographs Western dunes from a homebuilt plane.

While your CPA wrestles with that dilemma, you can enjoy the new Lincoln Town Car for what it really is: a refined, six-passenger luxury sedan with improved steering, a responsive overhead cam V-8 engine and the kind of poised handling that comes from a

LINCOLN

balanced rear-wheel-drive chassis. All of which makes spending time in the new Lincoln Town Car time well spent. For more information, visit our web site at www.lincolnvehicles.com, or call 1 800 446-8888 for a free brochure.

The new Town Car from Lincoln. What a luxury car should be.

THE HOUSE THAT ART BUILT

BY STANLEY MEISLER

PHOTOGRAPHS BY CHAD SLATTERY

MONEY IS NO OBJECT FOR THE GETTY TRUST, AS IT BUILDS ITS COLLECTIONS AND DOES GOOD WORKS AROUND THE GLOBE; NOW IT HAS A NEW HOME OVERLOOKING LOS ANGELES

A FELLOW TRUSTEE ASKED GORDON GETTY A FEW MONTHS ago if he thought his late father would have liked the new J. Paul Getty Center that carries his name, an enormous complex of rough-hewn travertine and enameled metal that now hovers over Los Angeles like a modernist cathedral of art. "Oh, he would have liked it," replied the youngest son of the oil baron that *Fortune* magazine once labeled the richest man in America, "but he wouldn't have liked the cost." Designed by Richard Meier, this spectacular museum and research campus on the ridges of the foothills of the Santa Monica Mountains, which will open to the public with great fanfare on December 16, cost close to a billion dollars. Never before has so much been spent to house an art institution in the United States.

The new Getty monument to art, which visitors reach on computerized trains that ascend à la Disneyland, has an odd heritage. Jean Paul Getty, who died in 1976 at the age of 83, relished his reputation as a skinflint collector who preferred a bargain to a Botticelli. He liked to wield his checkbook only when other collectors stumbled into harsh times. He purchased from victims of the stock market crash of 1929, for example, and from fearful Europeans preparing to flee in the uncertain years before World War II.

The long-awaited new Getty Center—a six-building, 110-acre arts and cultural campus—opens this month.

"He collected paintings," says John Walsh, the present director of the Getty Museum, "without much flair, without much love, and without much money." Getty's naiveté about painting, in fact, was matched only by his disturbing take on politics. During the era of his early purchases, he extolled Benito Mussolini as "the greatest son of Italy since Augustus" and described the Nazi German troops that conquered Poland as "fine-looking, honest fellows." His son Gordon, a San Francisco composer, is surely embellishing his father's reputation with the notion that he would have liked this modern masterpiece.

Getty Museum director John Walsh in the new digs, which include a Régence paneled gallery, c. 1710-30 (right).

Old man Getty probably would have thrown a tantrum. He abhorred modern stuff. He liked to feel engulfed in the worlds of ancient Greece and Rome. According to one friend, he even fantasized that the spirit of the Roman emperor Hadrian lived inside himself. He ordered the earlier J. Paul Getty Museum, overlooking the Pacific in Malibu, designed in the form of an ancient Roman villa. When it opened in 1974, it provoked a gale of guffaws from architecture critics. The likes of Meier were never for Jean Paul Getty.

But Getty's whims and passions no longer matter; unlike a host of other wealthy American collectors, he did not impose a stringent set of rules on how to use his bequest. He was not Dr. Albert C. Barnes, whose strictures on hanging, arranging, moving and exhibiting his paintings still haunt the keepers of the fabulous Barnes Foundation collection outside Philadelphia (SMITHSONIAN, May 1993). In one of history's most generous acts of patronage, Getty bequeathed enormous wealth to a trust and charged it only with running a museum named after him and fostering "the diffusion of artistic and general knowledge."

With an endowment now worth more than $4 billion, the Getty Trust is the wealthiest private art institution in the world. The trust spends at least five times more than the Metropolitan Museum of Art on acquiring new paintings and other works of art. When a painting worth tens of millions of dollars comes on the market, only the Getty can outbid determined Japanese and American collectors. Even its most generous and altruistic activities reek of wealth. For example, all museums, including the Getty, have small staffs of conservators who maintain the paintings and other works in their collections. But the Getty Trust also finances a unique institute with a staff of almost a hundred who travel throughout the world, conserving sites and teaching local teams in the process—at the tomb of Queen Nefertari in Egypt, the Buddhist grottoes along the Silk Road in China, the old colonial historical center of Quito in Ecuador, and a host of other exotic places.

In an era of downsizing and diminished public spending, the Getty operation seems so profligate to outsiders that it is no surprise that a jealous and resentful art world is ready to chortle at any mistake, any fumble. "I've always said that Getty-watching is like going to the Indianapolis 500," museum director Walsh laments to me in an interview. "You're not there to see them go round and round. You're there to see them hit the wall."

That may explain why Thomas Hoving, former director of the Metropolitan and editor of *Connoisseur* magazine, took after the Getty Museum with such relish in the 1980s when evidence mounted that it may have been hoodwinked with a $7 million purchase of a sixth-century B.C. Greek kouros (a larger-than-life statue of a youth). Hoving concluded that a disreputable museum curator had knowingly purchased a fake because he resented Getty bosses that "he felt were obscene know-nothings who perpetually equated money with artistic quality." The case against the kouros is still unproven, but enough doubt has arisen for the museum to mount it in an exhibition that details the arguments for and against the statue's authenticity. The Getty believes the kouros to be authentic.

Some anti-Getty sniping can strike an outsider as petty. Several scholars, chosen to spend a year doing research at the Getty, complained a few years ago that they were treated too well: tastefully furnished apartments with maid service, catered lunches with excellent wine, servings of tea and cookies every afternoon, no pressure to produce. "It's unusual to be somewhere where you don't have to do anything," groused Swiss architectural theorist Stanislaus von Moos in 1993. "I could not stay another year." Another scholar derided the program, which brings a dozen scholars together every year, as "a think tank where nobody's thinking." The whining was overdone. "Getting a Getty is like winning the lottery," said Luigi Ballerini, a former Getty scholar who teaches Italian at the University of California at Los Angeles. "Anyone who complains . . . should be shot."

Despite its behemoth wealth and the excitement of the stunning Meier complex, where most of its activities are based, the Getty Trust is still not a major influence in American artistic circles. Although its influence grows con-

stantly, even its riches may not be great enough in the modern market to amass a collection as magnificent as that of the Met, the National Gallery of Art in Washington, the Art Institute of Chicago, the Museum of Fine Arts in Boston or the Philadelphia Museum of Art. Undoubtedly aware of this reality, the board, led by president Harold Williams, decided in the early 1980s to channel a good deal of spending into activities that might make an impact on the art world in different ways.

The new direction taken by Williams, who became president in 1981 and will retire on his 70th birthday next January 5, has enhanced the reputation of the Getty Trust. The son of Russian immigrants, Williams came to the Getty after a distinguished career as chairman of the Securities and Exchange Commission under President Jimmy Carter, chairman of the board of Norton Simon, Inc., and dean of the graduate school of management at UCLA.

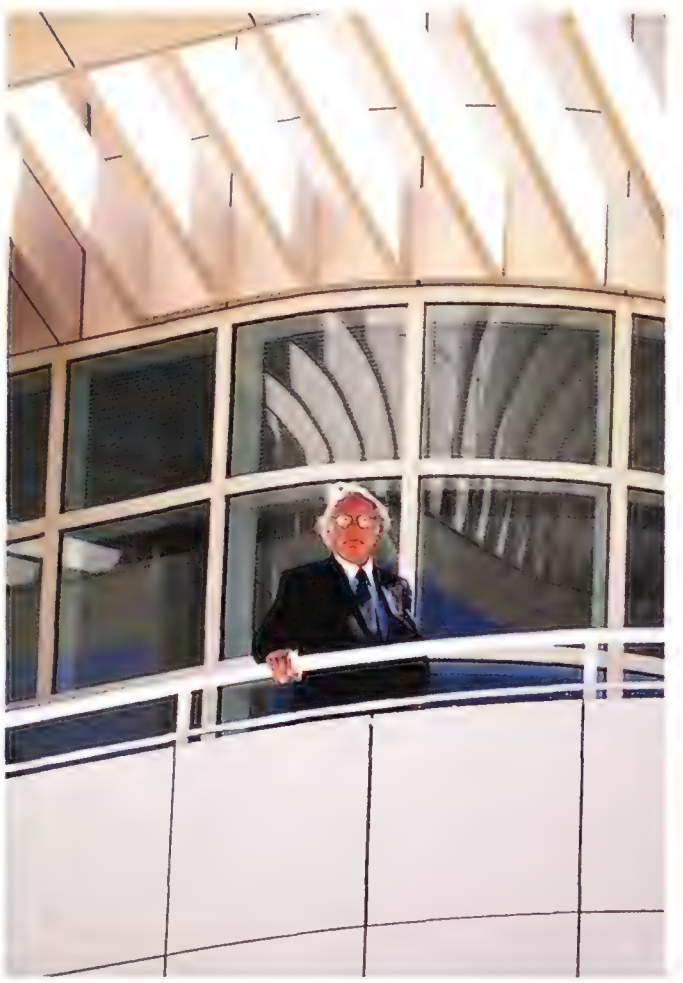
Williams helped power the Getty to incredible wealth. Jean Paul Getty had left the museum 12 percent of the stock of the Getty Oil Company as its endowment. Williams aligned those shares with the 40 percent controlled by Gordon Getty in a bitter fight in 1984 against the oil company's board. With majority control, Gordon Getty and Williams agreed to sell the company to Texaco for double what the shares had been worth a year before. That deal and careful investments ballooned the trust's endowment from $1.2 billion in 1982 to $4.3 billion now.

The Williams philosophy of expansion accounted for the creation of the conservation institute. He also developed the costly Getty Research Institute, which boasts a distinguished library and the scholars program. The library's material on art dealers is already so renowned that the Metropolitan deposited its own collection of the papers of English dealer Joseph Duveen there as a gift last year. Since the reign of Williams began, the Getty Trust has also established an information institute that encourages the exchange of cultural data by computer, an education institute that lobbies for more art and art history classes in schools, a leadership institute that trains curators and museum administrators, and a grant program that spends more than $6 million a year supporting museums and scholars.

Yet, despite the breadth of these activities, the Getty Trust has been aware that without a first-rate museum it will always be regarded as a second-rate institution. The museum was decidedly second-rate when Getty died. The alchemy of transforming dross into something stellar fell to John Walsh, an urbane, soft-spoken scholar of 17th-century Dutch painting who was named director of the Getty Museum by Williams in 1983. At the time, Walsh was curator of European paintings at the Museum of Fine Arts in Boston. J. Paul Getty had died seven years earlier and left behind a fine group of 18th-century French furniture, a better than average collection of Greek and Roman antiquities and an utterly mediocre batch of European paintings.

All the Getty holdings were then in Malibu, in a near replica of the Villa dei Papyri in Herculaneum that was buried under volcanic mud at the same time as Pompeii when Mount Vesuvius erupted in A.D. 79. This Romanized building in Malibu, which Getty never left London to see, struck many intellectuals as schlock; it reminded the novelist Joan Didion of something "dreamed up by a mafia don." But the villa seemed to please many ordinary visitors who wandered in its gardens and were cooled by its waters. While they may also have enjoyed the Greek and Roman statues inside the villa, they were probably disappointed by upstairs galleries too dark and dingy to display paintings well. Walsh, in any case, had few to show off. "I can't exaggerate how unworthy of an important museum the painting collection was then," he recalls today.

Architect Richard Meier envisioned a structure "emerging serene . . . from the rough hillside."



But Walsh had and still has incredible sums at his disposal. The most recent annual report of the Getty Trust lists an expenditure of more than $110 million by all its units in 1996 for "collections development." In some years, the trust has spent even more. In contrast, the Metropolitan spent $9.5 million on acquisitions in 1996; individual donors and foundations gave another $10 million to buy art that year. The National Gallery of Art spent $12.4 million on acquisitions in 1996.

The recent adventures of Van Gogh's *Irises* dramatically demon-

"My TV reception is so clear, you'd think I had a 50-foot antenna on my roof!"

Emerson's ingenious new antennas are hard to spot, easy to install and provide clear, powerful reception of broadcast signals...without rabbit ears.

by Hope Chapman

Replace your unsightly "rabbit ears" today!

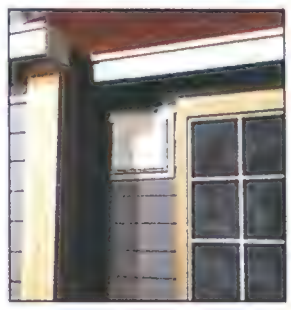
I'm amazed at the way technology has improved television. Developments in electronic circuitry have resulted in TV sets that have sharper pictures, brilliant colors and clearer sound. From the smallest portables to wide-screen home theater systems, televisions continue to work better and better as optical innovations are introduced. Unfortunately, a television's picture is only as good as the broadcast it's receiving, and even the world's best televisions cannot make up for a weak or distorted signal. Antenna technology has not kept pace with television design, and the rabbit ears from the 1950's are not far removed from what's available today. Well, there's finally been a quantum leap in the design of antennas, and it's the result of two patented components developed by scientists. These improvements are the secret behind Emerson's revolutionary new antennas.

Picture imperfect. Cable subscription solves the problem of getting the signal to your television, but storms and other factors can result in cable outages. If you prefer not to pay the rising monthly fees for cable or live in an area where it's not available, your picture is likely to be weak, undefined and distorted.

One way to improve your reception would be to mount a large antenna on your roof. Unfortunately, most roof antennas are not particularly pleasing to the eye and may even be prohibited in the area where you live. Rabbit ear antennas don't improve your picture to any great degree and make your room look like something from an earlier decade. Most antennas need to be aimed at the source of the broadcast and require turning mechanisms to pick up the signal clearly.

Whether you live miles out in the country or in a concrete building next door to a broadcast tower, bad reception can rob you of the definition and color you were intended to see. The Optima antenna gives you the signal-grabbing power of a large antenna in an inconspicuous, low-profile size.

Stealth antenna. In the past, creating an antenna with optimal reception meant making it big, with a large amount of surface area. This resulted in products that were large and unsightly or small and ineffective. Either way, the aesthetic look of your room or house suffered. Research and development tended to focus on the television, not on signal reception...until now.



Your neighbors won't know it's there unless you tell them.

Recently, a brilliant scientist in Colorado developed an antenna that would maximize reception without being overly conspicuous. Emerson, a leader in electronic technology, has now made this innovation available to the public.

At a lab in Colorado, they developed two patented design improvements that made the Optima antenna possible. First, they created a flexible circuit board with a serpentine antenna, resulting in a large surface area confined to a small space. Second, they developed a technique that converts the copper shielding on the attached cable to an additional signal receiver that results in an antenna almost 10 feet long. This greatly enhances the antenna's reception power and allows you to tune the antenna by simply moving the cable! The handmade assembly is encased in aircraft-grade plastic and high-density foam. The weather-resistant cover is a neutral white and can be painted to match the color of the house or room. Plus, the omnidirectional design allows you to mount the unit anywhere you please. The Optima's universal design makes it adaptable to any component, and installation is a snap. Simply mount the antenna on a wall inside or outside the house, connect the cable and fasten it in place. Then sit back, relax and enjoy the clearest picture you can get from your television.

Attention mini-dish owners. If you own a mini-dish satellite system, you are aware of the off-air issue and are probably wondering how you can pick up local broadcasts. After all, what good are hundreds of channels if you can't find out who won the local city council race? The Dishmate™ harnesses the same technological innovations as the Optima TV antenna to give you a powerful omnidirectional antenna that is virtually invisible. It is compatible with a variety of systems and is easy to install.

Get the picture...risk-free. Call now to order the Optima Indoor/Outdoor TV Antenna or the Dishmate™, the small antennas that get big reception. They both come with a 90-day manufacturer's limited warranty and Comtrad's exclusive risk-free home trial. Try them, and if you're not completely satisfied, return them within 90 days for a full "No Questions Asked" refund.

Indoor/Outdoor Antenna . . . . .$69.95 $8 S&H

Dishmate™ UHF/VHF Antenna . $69.95 $8 S&H

The Dishmate™ Antenna will work with 18" dishes from RCA, Toshiba, ProScan, GE, Eurosat, Uniden, and Hughes DSS™ Satellite systems.

Please mention promotional code **2832-12117.**

For fastest service, call toll-free 24 hours a day

800-992-2966

DISCOVER NOVUS VISA MasterCard Cards

To order by mail, send check or money order for the total amount including S&H. To charge it to your credit card, enclose your account number and expiration date

Virginia residents only—please include 4.5% sales tax.

comtrad industries

2820 Waterford Lake Dr., Suite 102
Midlothian, Virginia 23113

Meier abandoned his trademark white surfaces for the Getty Center; Italian travertine and enameled-metal panels set a classic tone.

strate the economic might of the Getty. In 1987, Australian businessman Alan Bond purchased the 1889 painting at a Sotheby's auction in New York for $53.9 million. That was the highest price ever paid for a single work of art and made headlines worldwide. But Bond had overreached himself. His business empire soon crumbled, and he could not pay Sotheby's all that he owed. The Getty Museum came to the rescue, agreeing in secret negotiations to buy the painting in 1990. The price was not disclosed, but no one in the art world believes the Getty bought it cut-rate. The price may even have topped the 1987 record.

Walsh has used his bounty over the past 15 years to augment the Greek and Roman holdings and create important collections of illuminated medieval manuscripts, European sculpture, drawings and photographs. But the allure of a major museum depends on its paintings. Getty Trust president Williams tried years ago to persuade a former boss, California corporate magnate Norton Simon, to merge his fabulous collection of paintings with the Getty's. But Simon, who died in 1993, had put his entire collection inside the former Pasadena Art Museum—which had agreed to change its name to the Norton Simon Museum and devote itself entirely to his gift—and there it would stay. Despite many wise purchases by Walsh and his staff, the Getty's collection of paintings still does not outshine that of the Norton Simon Museum. But it comes close now, an astounding achievement.

Walsh and Williams have made no attempt to include every period or artist in the Getty collection of paintings. "If you are doctrinaire and act like you are filling all the squares of a stamp album," Walsh tells me, "you are mediocre." Instead, the museum adopted the policy of trying to buy a masterpiece whenever it came on the market, no matter who painted it. (One exclusion: the museum does not collect 20th-century paintings.) Walsh and his staff followed a simple philosophy. While it could never be the Louvre, the Getty could still be very good. As former curator George Goldner, who did most of the buying for the Getty from 1989 to 1993, has put it, "I can't be Robert Redford, but I still fix my hair in the morning."

A catalog of some of the Getty's most newsworthy purchases of recent years, and their reported prices, offers an insight into the eclectic and distinguished nature of the changing collection. The Getty bought Pierre-Auguste Renoir's *La Promenade* in 1989 for $17.7 million, Edouard Manet's *The Rue Mosnier With Flags* in 1989 for $26.4 mil-

You don't have to leave your own country to find third-world poverty.

Just travel along the hillsides and down through the valleys where the Appalachian coal mines have been shut down. Sad, hungry faces of little children, like Amy's, will haunt you.

For just $21 a month, through Children, Inc., you can sponsor a girl or boy in desperate need. You can help provide food, warm clothes, health care, school needs. And maybe a toy or two. And we'll send you your child's story, address and picture.

Write or call, but please, don't look the other way.

Write to: Mrs. Jeanne Clarke Wood
Children, Incorporated, P.O. Box 5381
Dept. S12A7, Richmond, Va. 23220 USA

❑ I wish to sponsor a ❑ boy, ❑ girl, in ❑ Asia, ❑ Latin America, ❑ Middle East, ❑ Africa, ❑ USA, ❑ Greatest need.

❑ I will give $21 a month ($252 a year). Enclosed is my gift for a full year ❑, the first month ❑. Please send me the child's name, story, address and picture.

❑ I can't sponsor, but I will help $_____.

❑ Please send me further information.

Name

Address

City

State Zip

❑ Check ❑ Am. Express ❑ Visa ❑ MasterCard

Card No. Expires Date

Signature

1-800-538-5381

CHILDREN, INC.

Serving Needy Children Since 1964

U.S. gifts are fully tax deductible.
Board financial statement available on request.

lion, Pontormo's *Portrait of a Halberdier* in 1989 for $35.2 million, Francisco de Goya's *Bullfight: Suerte de Varas* in 1992 for $7.4 million, Rembrandt's *Daniel and Cyrus Before the Idol Bel* in 1995 for $7.5 million, Fra Bartolommeo's *The Rest on the Flight into Egypt with Saint John the Baptist* in 1995 for $22.5 million, Paul Cézanne's *Still Life With Apples* in 1996 for $25 million, and Nicolas Poussin's *Landscape With Calm* in 1997 for $26 million. In all, the Getty has bought 140 paintings since Walsh took over 14 years ago.

Getty officials deny accusations that their museum's wealth distorts the art market and drives prices up with purchases like these. "If we drive it up, we lose," Williams tells me during an interview in his new offices. The case is impossible to prove one way or another; no one knows what the market would be without the Getty. But its winning bids often set record prices. In the case of the Renoir and the Manet bought in 1989, for example, the Getty paid more than twice as much as paintings by these artists had ever cost before.

The Getty's deep pockets have provoked the greatest resentment in Britain. The British have the most thriving and liberal art market in Europe. Unlike France, Italy and Spain, Britain allows important works of art to leave if no one in the country can match the price offered for them. The export is held up for several months to give British buyers a chance to come up with the funds. Between 1993 and 1996, the Getty bought 11 paintings and drawings worth $78 million through this system. The Getty purchases accounted for 70 percent of the value of all the works of art that the British had allowed to export after a delay.

It is not surprising that in Britain, as Roger Hollest of the Phillips auction house in London told a *Los Angeles Times* reporter, "for some people, the very name 'Getty' is a red rag to a bull." In a celebrated campaign, Britain stopped the Getty in 1994 from buying *The Three Graces*, a 19th-century marble statue of three life-size female nudes by the Italian sculptor Antonio Canova. The sale to the Getty was rejected by the British government when the Victoria and Albert Museum and the National Gallery of Scotland together came up with $11.6 million to match the purchase price. Ironically, the two British museums were able to buy *The Three Graces* only after receiving a $1.5 mil-

A grand collection takes shape at the Getty

Goya's *Bullfight: Suerte de Varas*, painted in 1824, and the other works shown here are among 140 paintings acquired in the past 14 years.

Fra Bartolommeo's *The Rest on the Flight into Egypt with Saint John the Baptist*, c. 1509.

J. PAUL GETTY MUSEUM, LOS ANGELES (4)

It is not surprising that in Britain, "for some people, the very name 'Getty' is a red rag to a bull."

lion donation from J. Paul Getty II, the third son of the oil baron. Getty, who has lived in London since 1971, insisted that he was motivated only by regard for the British art world, not by any animosity toward his father.

Whatever its standing in Britain, the Getty Museum, in Walsh's view, now has international respect. "When I took over in 1983 there was this caricature abroad of all this Getty oil money in the hands of California vulgarians," Walsh says. "But they have a clearer picture of us now. We're taken seriously."

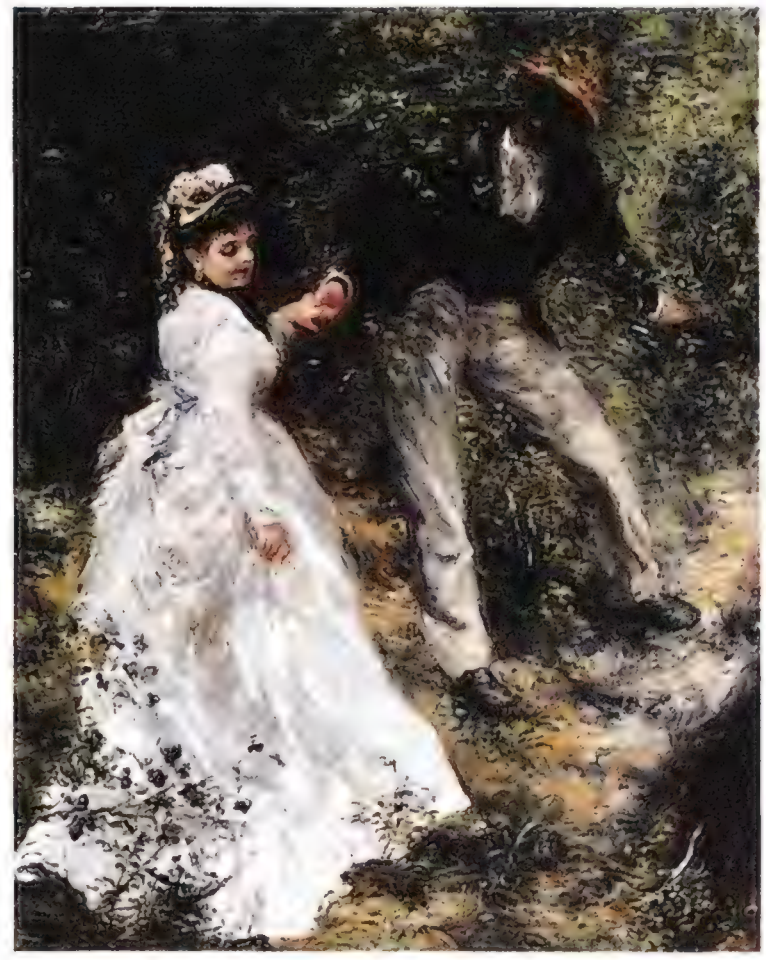
In 1984, the Getty Trust selected Richard Meier as its architect for the 24-acre hilltop campus that would comprise the new museum (the Malibu villa would be retained and refashioned for the study and exhibition of Greek and Roman antiquities) and five other buildings for the various other Getty activities. Meier, who won the Pritzker Prize, architecture's most celebrated accolade, that same year, was the leading American disciple of Le Corbusier. Almost all his buildings bore the same signature: gleaming white walls of enameled metal wrought in cylinders, rectangles and other geometric forms, with daring outer staircases and railings giving them the look of an ocean liner. When hired by the Getty, he had designed the High Museum of Art in Atlanta and the Museum for the Decorative Arts in Frankfurt; he would later design the Museum of Contemporary Art in Barcelona.

The Getty Center project took 13 years to complete and cost almost ten times the original estimate. Los Angeles officials made it clear that white enamel gleaming in the California sun would be unbearable; Meier, for the first time in his career, hunted for a suitable stone. "I left no stone untouched," he told me recently. "I looked at every stone in the world." After three years, he settled on Italian travertine specially cleft into a rough surface. In all, 14,000 tons of travertine were shipped from Italy. Meier did not forgo the use of enameled metal—but he colored it light beige, much like the stone.

Meier designed the Getty Center so that it followed the curve of the heavily traveled San Diego Freeway beneath the hills. Motorists can see it from different angles as they

Still Life With Apples (1893-94), acquired last year for $25 million, is the first mature work by Cézanne to enter the collection.

The price paid for *La Promenade* in 1989 more than doubled the previous record for a Renoir.



The Malibu villa built by Jean Paul Getty, who started it all, is being renovated, to reopen as a museum and study center in 2001.

round their way north or south on the freeway. "You see the Center. It disappears. It reappears. It's exciting," said the white-haired Meier in his gleaming white 10th Avenue offices looking out on the midtown Manhattan skyline. "In contrast, I sit here and look at the Empire State Building. It's wonderful. But it's no mystery."

The project was rife with artistic conflict. Williams and other Getty officials disappointed Meier by bringing in outsiders to supplant some of his work. Thierry Despont, a French-born architect based in New York, was hired to design the interiors of the museum galleries that would display French furniture and other decorative art. Meier had wanted bare contemporary galleries, but Despont decorated the rooms with damask, silk and faux marble. "What they wanted and got were period rooms," said Meier, making it clear that "period rooms" was a genre that did not fit into his own scheme of contemporary architecture.

The Getty Trust also hired Los Angeles artist Robert Irwin to design a three-acre garden with 500 species of plants—a garden as "a living work of art"—on the grounds between the museum and the research institute. Williams evidently wanted the complex to have some prominent input from the local art scene. Meier, who insists that no other contractor has ever foisted other artists on him, objected even more angrily to Irwin than he had to Despont. Meier described his complex as designed with "an Aristotelian structure, an order and a logic . . . with as little as possible left to chance." In his view, the Getty fractured that Aristotelian order and logic by commissioning Irwin to fashion a personal work of art in a space that Meier created. "That's what hurts the most," Meier said.

Yet there is no doubt that the complex as a whole is Meier's work of art, surely his most remarkable and important achievement. From afar, the Getty Center looks like a medieval Spanish hill town with castle, church and city hall clustered together on top. The rough travertine makes the complex seem aged and permanent. Recently I ascended the hill and then strolled among the low-lying buildings; the enameled metal and daring staircases and sheets of glass emerged in all their modernity, yet somehow never clashed with the slabs of old-fashioned stone. Walking from one gallery to another in the museum, I came upon magnificent vistas of the Los Angeles area. Malibu and the Pacific Ocean are ten miles to the west, the UCLA campus two miles to the east and the rest of the city just beyond. If the vistas are framed by walls of travertine, there is a special excitement, for the great hovering presence of the stone made me feel as if I were peering down from some place very old or timeless.

"Jean Paul Getty might not like this kind of architecture," Meier told me. "But, many years from now, no one will remember that Jean Paul Getty was once the richest man in America. People will have no idea who he was. But they will know that this art center on the hill is named after him. And that should please him."

Stanley Meisler writes on foreign affairs for the Los Angeles Times. *Chad Slattery lives just up the freeway from the new Getty Center.*

Universal Thrills DISCOVERed

Shop with your Discover® Card and you could win a knockout vacation to Universal Studios Hollywood.

This holiday, every time you shop with your Discover® Card, you're automatically entered to win one of ten family vacations to Universal Studios Hollywood and Jurassic Park–The Ride.®* Plus, when you buy The Lost World: Jurassic Park™ video with your Card, we'll send you these binoculars free.**

it pays to

Apply for the Discover® Card and make a statement of your own.
Call **1-800-IT PAYS TO**

www.discovercard.com

NOVUS

Accepted where you see the NOVUS® sign

UNIVERSAL

www.universalstudios.com/home/lostworld

No purchase or card application required. U.S. residents 18 or older. Void where prohibited. For free entry details/rules, send SASE to: Rules, P.O. Box 4244, Blair, NE 68009-4244. WA & VT residents may omit return postage. Starts 11/1/97. End dates vary by entry method from 12/31/97 to 1/9/98. **See store display for order form with details. TM & © 1997 Universal City Studios, Inc. & Amblin Entertainment, Inc. All rights reserved. ©1997 Greenwood Trust Company, Member FDIC.

The New Chrysler Town & Country

What a penthouse looks like on the ground floor.

The new Chrysler Town & Country LXi offers a whole new level of luxury. To begin with, it was designed to pamper seven. Inside, you'll find such luxurious amenities as leather-trimmed seating, Dual Zone Temperature Controls and an acoustically tailored 10-speaker 200-watt audio system. And here's one that's certain to spoil you: Town & Country is now available with personalized heated front seats. All of this, plus an even more refined design, helps make the new

hrysler Town & Country a most uncommon
uxury address. To find out more, simply call
800.CHRYSLER or visit www.chryslercars.com.
Ve'd be very happy to give you a walk-through.

C H R Y S L E R

E N G I N E E R E D T O B E G R E A T C A R S

The belled VIPER

EVEN HUNTERS OF TIMBER RATTLERS NOW ADMIT THAT THESE SNAKES ARE SHY, PLACID—AND VERY FRAGILE

BY SCOTT WEIDENSAUL

I WAS IN A PLACE I CANNOT IDENTIFY, WITH A man I will not name. All I can tell you is that it was somewhere in upstate New York on a chilly day in early May, when the trees were just breaking bud and the forest bore only a thin, gauzy wash of green. Dry oak leaves crunched underfoot as we walked along the top of a ridge, past small, white clumps of blooming anemone and splashes of purplish phlox. It was jacket weather, although the occasional shafts of sunlight through the clouds were enough to warm the rocks of an old, ramshackle stone wall that meandered through the forest. As we approached the wall, my companion pointed with his walking stick. "He ought to be right there. Ease up and see if you can spot him."

I crept up slowly and peeked over a low, collapsed section of rock. On the south side, shielded from the wind but exposed to the weak sun, a beautiful timber rattlesnake was coiled. Its three-and-a-half-foot-long body was the color of sulfur, a lovely, almost satiny shade of yellow, banded with dark saddles of chocolate. The rear third of the snake deepened to velvet black, ending with a

PHOTOGRAPHS BY DAVID W. HARP & CARL A. HESS

string of 15 horn-colored rattles. Its head was flat and wide, the cat's-pupil eyes overhung by brow scales that gave it (quite accidentally) an angry, menacing appearance. In fact, the rattlesnake ignored me completely, although I was only a few feet away. It was undoubtedly aware of my presence, but the meager warmth of the sun was more important, and if I came any closer, it had simply to flow down one of the many gaps in the wall to safety.

Twenty years earlier, Brennan would have been snatching snakes, flushed with the excitement of rattler hunting.

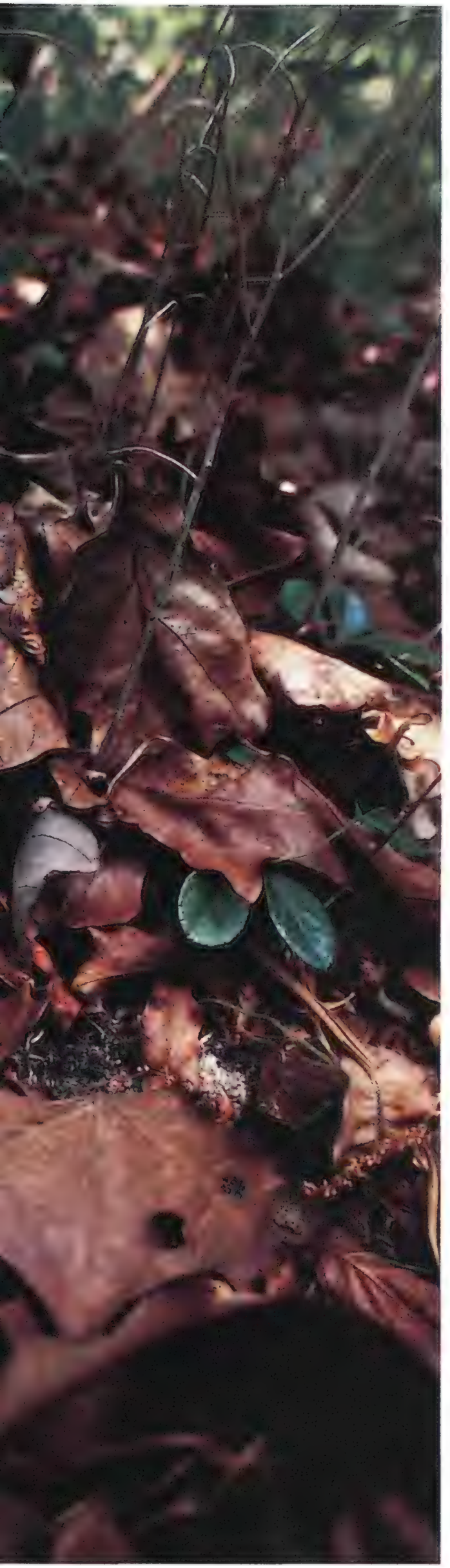
I cannot tell you where I was, or with whom, because the man who took me to see this and other rattlesnakes wants them protected, and fears that disclosing his name or the location, even in general terms, might expose the snakes to danger from illegal collectors. Nor is he alone; I have been sworn to secrecy by many snake hunters and researchers, threatened with blindfolds (and worse) before they would take me to their favorite dens and basking rocks, and admonished with stories about sites that were cleaned out by poachers because someone had a loose tongue.

Welcome to the secretive—one might say slightly paranoid—world of those who study timber rattlesnakes. Yet the paranoia is sometimes justified; this once-common reptile is vanishing at an alarming rate across much of its formerly wide range, the victim of habitat loss and fragmentation, zooming cars, unscrupulous collectors, and those who react to the sight of any snake by reaching for a gun or stick. Today, the timber rattlesnake is gone entirely from three states and is on the threatened or endangered lists of at least ten others, especially in the Northeast. Only in the central Appalachians and Ozarks is the species reasonably secure—and even there, biologists foresee a long, steady decline unless action is taken soon.

Rattlesnakes are pit vipers, a highly evolved group that also includes the copperheads and the cottonmouths, as well as such tropical species as the bushmaster and the fer-de-lance. There are 30 species of rattlers, half of which are found in the United States, mostly in the Southwest; Arizona alone has 12 different kinds. But the timber rattlesnake, *Crotalus horridus*, is the only rattler in much of its range, which extends from Oklahoma and Nebraska up the cool and misty Appalachians to southern New England, and along the rocky bluffs of the Mississippi to Wisconsin and Minnesota. (A more plentiful subspecies, the canebrake rattler, is found along the Eastern coastal plain from Texas to the extreme southeast section of Virginia.)

Although some scientists lump the timber rattler and the lowland canebrake together as one species, they are physically and ecologically different. Timber rattlers come in a variety of colors, called phases or morphs, ranging from a clear golden yellow through various browns to nearly coal black, although even yellow-phase snakes have a charcoal tail. Early naturalists thought the color phases were a sign of gender, but that is not true. They are, however, tied to habitat—the black snakes tend to use shadier, more heavily forested habitat, where dark pigment may help these cold-blooded animals blend in and absorb scant sunlight for warmth.

Timber rattlers are creatures of the mountains and forests, and while they spend most of their time hidden deep in the woods, they are most often encountered by humans on rocky outcroppings or ledges—the famous "snake dens" of the Appa-



lachians, where pregnant female rattlers gather to bask in the sun, a kind of mobile incubator. I saw my first rattlesnake in just such a place, when I was about 13 years old. I was fishing with two school chums in the mountains of northern Pennsylvania, taking a break on a boulder-strewn slope to eat lunch, when my friend Lloyd reached for what he thought was a heavy stick. Instead he yelped and scrambled back as the "stick" coiled and began an angry rattle. It was a 41-inch rattlesnake, black as night, and I am ashamed to say I know exactly how long it was because we bludgeoned it to death and took it back to show our parents. Even then I knew it was wrong—I was an aspiring amateur herpetologist, after all—but I was caught up in the sort of lynch mob mentality that often oozes to the surface when a venomous snake is seen.

Twenty-five years later, I found myself just a few miles from the scene of my childhood shame, trying to keep up with Curt Brennan and Mike Machmer. It was a sultry day in early August, humid and close, and we were panting up a steep mountainside—or at least, I was panting; my companions, who do this sort of thing all the time, were not. At last we reached level ground and began bushwhacking through dense, waist-high thickets of bracken fern, laurel and blueberries. Brennan, a solidly built man with a clipped gray mustache and steel-rimmed glasses, led the way, while Machmer—shorter, wirier, with a full black beard—brought up the rear. Both carried wooden sticks tipped with stout metal hooks, the emblem of serious snake hunters.

We stopped eventually near a large outcropping of gray sandstone, a ledge that was, to my eye, identical to half a dozen others we'd passed without a second glance. Brennan moved more carefully now, stepping lightly as he threaded a path through the underbrush. I followed him, walking as nearly in his footsteps as I could, until we were within a few yards of the boulders.

Using his stick, Brennan parted the laurel in front of us. Instantly, a harsh, insect-like buzzing filled the air, like the dry sound of summer cicadas, and what looked like a pile of leaves began to move. More than two dozen rattlesnakes were basking in the hazy sunshine, heaped in an area the size of a card table, and as they sensed danger they began to separate and back away, toward the safety of deep, protective holes beneath the rock.

Twenty years ago, Curt Brennan would have been wading into the melee, snatching snakes with his hook and stuffing them into collecting bags, flushed with the danger and excitement of rattler hunting. He was good at it, too; in 1977, Brennan and a friend captured the "most snakes" prize at the venerable Morris, Pennsylvania, rattlesnake hunt by hauling 70 timber rattlers down from the mountains. But not long thereafter, Brennan underwent a change of heart. Far from being the vicious, menacing creatures that most people believe them to be, timber rattlers, Brennan began to realize, are shy, retiring and exceptionally fragile, easily injured by the rough handling they receive in capture. What's more, he found that rattlers were disappearing from many of the haunts where they'd once been common. Believing them dangerous, most people killed

Cryptic coloring, here providing camouflage in New Jersey's Pine Barrens, evolved primarily to help rattlesnakes as predators. Prey must be unable to see the snake and must come very close to be in range of a strike.

A just-born timber rattler in Pennsylvania is still wrapped in its membrane sac. Within minutes the snake will poke through and begin breathing with its lungs.

rattlesnakes on sight, while die-hard snake hunters went so far as to force them out of their underground retreats with gasoline fumes or the acrid smoke from road flares—even using crowbars and hydraulic truck jacks to pry apart the ledges where generations of snakes had sought safety.

Today, Brennan, 45, still hunts for rattlesnakes but only to observe them. A forest maintenance supervisor with the state Bureau of Forestry, he has become an eloquent spokesman for the snakes, even writing a book, *Rattler Tales from Northcentral Pennsylvania*, about his conversion from hunter to advocate. He also symbolizes the public's slowly changing attitudes toward these slender, graceful hunters.

"This is basically a placid and peaceful animal," Brennan said. "I can't stand being a fake, and I was helping to perpetuate a lie by portraying myself as a rough, tough saver of mankind by rounding up rattlesnakes. And I knew that the snake population was in trouble if I, and others like me, continued to do what we were doing. Just by getting close to the animal, and being around it for a very short time, you learn that they're not what people have led you to believe they are. If you give yourself two minutes to calm down, you'll learn that the animal isn't out to get you—it's out to get away from you."

Rattlesnakes have long held a mingled dread and fascination for us. In the Eastern part of the country many Indian tribes venerated them, referring to rattlesnakes as "Grandfather" and treating them with respect. The Colonists did not follow suit. The "belled viper" was one of the more sensational finds in the New World, and almost everyone agreed that the serpents were unspeakably evil, and should be killed on sight. "Our Trained Bands in some of our Countrey towns . . . carry on a *War* with the *Snakes*, and make the killing of them, part of their Discipline," wrote Massachusetts Puritan Cotton Mather in 1712. Benjamin Franklin called rattlesnakes "Felons. . . from the Beginning of the World," but several Revolutionary War flags carried rattlers, including the famous Gadsen flag with its "Don't Tread on Me" warning to Great Britain.

Battle emblem or no, the snakes were killed whenever they were encountered. John Bartram, the otherwise mild-mannered Quaker botanist, was crossing the mountains north of his home in Philadelphia in 1751 when he encountered a timber rattler. "We were warned by a well known alarm to keep our distance from an enraged rattle snake that had put himself in a coiled posture of defense, within a dozen yards of our path, but we punished his rage by striking him dead on the spot." Others took the battle to the enemy. In the early 19th century George Catlin, who went on to fame as a painter of Western Indians, wiped out a den in northeastern Pennsylvania by tying a powder horn to the tail of a rattler, lighting a fuse and letting the snake escape into the rocks, towing the bomb behind it.

Myths grew up around the reptiles, each more bizarre and less factual than the last. The strings of rattles, which are simply hollow, overlapping sections of keratin, the same stuff as fingernails, do not mark the snake's age. (They get a new segment each time they shed their skins, several times a season, and lengths of the rattle break off easily.) Rattlers do not always warn before they strike, nor do they hypnotize their prey. They do not live in pairs, and if you kill one, the mate will not seek you out for vengeance. (In fact, females may not even need a mate to reproduce.) Colonists claimed the venom was so virulent that a man who killed a snake with a wooden switch later scratched his head with the stick and died.

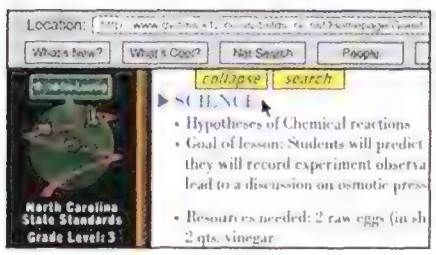
The 20th century has been no kinder to the timber rattlesnake. The killing became more methodical—and more permanently effective, as rattler populations were fragmented into smaller and increasingly vulnerable islands. The state of New York, which now lists the timber rattler as endangered, once paid contractors to dynamite rattlesnake dens to smithereens. Until recently, many states, counties and local municipalities paid bounties, shelling out cash for each rattle-tipped tail that was turned in. A few folks became professional

CARL A. HESS; PP. 96,97 CARL A. HESS; PP 98,99 DAVID W HARP

She already knew he needed
two eggs and some vinegar for his science project.

But now, she also knows why.

IBM's Reinventing Education Partnerships



Parents in Charlotte, North Carolina now have an uncanny ability to understand exactly what their kids are learning. They're using a specially designed Web site that lets them get involved with class projects, track their children's progress, even find out what's on the lunch menu.

By creating this Web site and allowing parents to access it from their homes, local libraries or community centers, IBM's Reinventing Education Partnership gives parents the ability to work with teachers to improve student achievement.

The project, called "Wired For Learning," was developed by a dedicated team of IBM researchers who worked with teachers, parents and students in Charlotte to create an interactive bridge between home and school.

By letting everyone work together, Wired For Learning turns the Internet into a valuable tool for improving the way kids learn. Resulting in better education and smarter students. To find out more about Reinventing Education, call us at 1 800 IBM-7080, ext. ED02, or visit www.ibm.com/IBM/IBMGives.

IBM

Solutions for a small planet™

A mother and recently born timber rattlers coil up together. The family will soon disperse, and the infants—armed with full venom glands—will start hunting for small rodents.

snake hunters, like the man in Minnesota who killed thousands over the years for the bounty. And as paved roads threaded the mountains, speeding cars killed more of the slow-growing reptiles than could easily be replaced by annual reproduction.

Stephen Harwig started observing rattlesnakes in the 1930s as a teenager in western Pennsylvania. Although he is not a biologist, Harwig has earned an unmatched reputation for his knowledge of rattlesnake habits and today, at age 76, still studies his favorite animal with undiminished energy. When he started, rattlers were common, enjoying a boom that followed the massive logging of the northern mountains at the turn of the century; the snakes thrived in the brushy second-growth stands of aspen, birch and huckleberries. But since then, as the forest matured and four-wheel-drive vehicles made the backcountry accessible, he's seen den after den ruined by killers and collectors.

"The rattlesnakes had their heyday back in the 1930s and '40s," Harwig told me as he, Curt Brennan and I combed a rocky slope in northern Pennsylvania for rattlers. "Then they got hit hard in the 1950s and '60s, so that now they're down to 5 or 6 percent of what they were, and they just seem to be barely holding on."

Brennan and I found a half-dozen snakes, ranging from babies less than a foot long to adolescents. But it was Harwig who made the prize find—a handsome 45-inch black-phase rattler, the biggest snake of the day, tucked back in a cleft of the rocks. After admiring it from a distance, we left it undisturbed.

In parts of the Northeast, the situation has grown so grave for the timber rattler that there have been efforts to protect it under the federal Endangered Species Act, which has far more clout than state laws. That hasn't yet happened, but more than 30 of the top rattlesnake experts in the country, both in and out of government, are working on a Conservation Action Plan, or CAP—a blueprint for identifying the threats to the rattler's future, and a guide to counteracting those hazards for state and federal agencies.

"It's a formidable task, because the rattler is so far gone in so many places already," said Earl Possardt, the U.S. Fish and Wildlife Service biologist who is coordinating the CAP effort. Among the 30 states that once had timber rattlers, Maine, Michigan and Rhode Island no longer do, and

CARL A. HESS

GET THE NATURAL LIGHT THAT PEOPLE CRAVE, ALL YEAR LONG.

Now there's a way to say goodbye to those dark and dreary winter days forever. That's because the Microsun Light Source produces a quality of illumination that's almost as natural feeling as the sun itself. So no matter if you're reading, sewing, working on the computer, or simply relaxing in front of the television, you can enjoy vibrant and natural light all day long, all year long.

A TECHNOLOGICAL BREAKTHROUGH INSPIRED BY THE SUN.

Only the Microsun Light Source provides illumination like natural sunlight.

At the heart of every Microsun lamp is the patented Microsun Light Source, an electronically controlled halide that provides more light output than a 300-watt halogen bulb, but uses just 68 watts!

"It's 7:30 p.m., mid-November, and it's been raining for three days straight. I've never been happier."

This technology produces light five times more efficiently than incandescent or halogen bulbs with the vibrant quality of natural sunlight — the light that people crave. And, with features like our sunrise start-up, Microsun truly is inspired by nature. It's no wonder Microsun technology is used in lighting the Library of Congress and the Tower Bridge in London.

Microsun lamps come in a variety of styles to fit your decor.

PUT THE POWER OF MICROSUN TO WORK IN YOUR HOME.

The Microsun Light Source is available in a variety of lamp styles designed to fit any decor. Special introductory prices start as low as $199. For a free catalog featuring all of our Microsun lamps, call 1-888-526-0022, ext. 123, or return the coupon on the right. Order before December 16, for guaranteed holiday delivery. We're so sure you'll see an immediate difference with Microsun technology that we're offering an unconditional 30-day trial offer. So call now.

Call Microsun toll-free, at 1-888-526-0022, ext. 123.

Ask for our FREE CATALOG and information on our unconditional 30-DAY TRIAL GUARANTEE.

Name: _____

Address: _____

City: _____

State: _____ ZIP: _____

Daytime Phone: ( ) _____

Evening Phone: ( ) _____

Special pricing expires December 31, 1997.

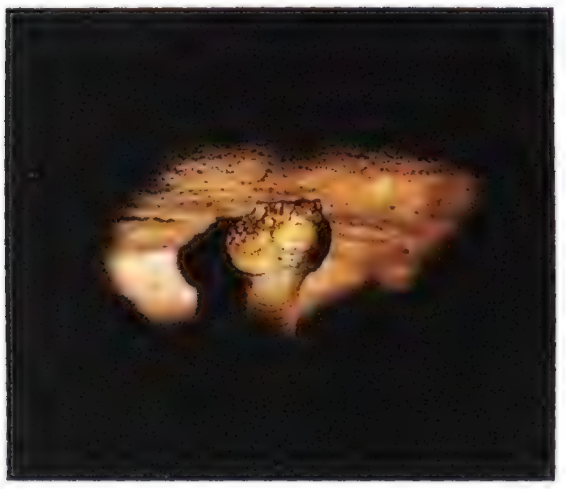
123

MICROSUN™

An ADLT Company

Mail to:
Microsun Technologies
1667 East 40th Street
Cleveland, OH 44103

Or call 1-888-526-0022, ext. 123, for faster service.



Above: Curt Brennan, right, and a friend once bagged 70 rattlers. Left: Sunlight reflected from a mirror helps to locate a den.

20 states have seen population declines of 50 percent to well over 90 percent, he said. "New Hampshire has just one surviving population. Vermont has three; Massachusetts, six or seven. Nebraska has three populations left, I believe. Of the 7 states that remain, only maybe 4 or 5"—Virginia, West Virginia, Kentucky, Missouri and Arkansas—"still look good.

"At best, we're trying to slow or halt the decline, not restore the rattlesnake to areas where it's been extirpated. Realistically—both biologically and politically—that wouldn't be possible," Possardt admitted.

In Pennsylvania, the timber rattler has been at the center of controversy for years, with conservationists pitted against organizers of the eight or ten annual snake hunts, held in small towns like Morris and Cross Fork in the rugged, heavily forested northern mountains. The state considers the timber rattler a candidate for its endangered species list, said Andrew Shiels, nongame biologist with the state Fish and Boat Commission. In recent years, Shiels said, the agency has clamped down on the hunts—limiting each hunter to just two rattlers, mandating that the snakes be released after the hunt at the place of capture and banning their use in "sacking contests" in which teams of hunters in an enclosure race to grab and bag as many as possible. (Sponsors now import out-of-state reptiles for the sacking competition.)

Scientists who have studied the events, and many reformed hunters like Curt Brennan, would like to see the carnivals phased out. Rattlesnakes are surprisingly fragile, and herpetologists contend that a large percentage of the snakes eventually die from the trauma of being caught. The survivors, they say, are often dumped far from their home territories, resulting in disorientation and death. And because the hunters frequently nab pregnant females exposed on basking ledges, rattlesnake populations in Pennsylvania are heavily skewed toward males. By one estimate, fewer than a quarter of all dens have the eight to ten breeding-age females needed for long-term survival.

Ironically, just as the belled viper is disappearing from many of its ancestral haunts, scientists have begun to appreciate the complex lives timber rattlesnakes lead. Almost everything about rattlesnake ecology, it turns out, makes the creatures vulnerable to humans—such as their positively glacial reproduction rate. Biologist William Brown of Skidmore College, in Saratoga Springs, New York, has been studying the species since 1978 and has found that a typical female timber rattler in the Northeast does not breed until age 9 or 10, and only gives birth every three or four years thereafter. Litters are small, usually just eight or nine babies that are born alive around Labor Day. Even though rattlesnakes can be long-lived—up to 25 years—most females only have the chance to breed once or twice in their lives, Brown discovered.

Pregnant females seek basking sites where they can move from shade to sun and back again, maintaining an even body temperature for the benefit of their embryos. Through this long summer pregnancy, the females do not hunt, reserving most of the space in their tubular bodies for their growing offspring. Because basking sites are used year after year, "snake dens" may become locally well known, and someone with a gun, a club and a grudge can kill a large percentage of the mature, breeding females in a population with just a couple of visits.

As with the choice of basking sites, tradition rules other aspects of a rattlesnake's life. Perhaps the most critical is where to spend the winter; in the Northeast, a snake may have to crawl several feet underground to get below the frost line, and it must choose a winter den, or hibernaculum, with damp air if it is to avoid fatal dehydration. Many dens in the central Appalachians, researchers have found, are in mature forests with a thick, insulating cover of leaves on the ground; logging may render the den site useless. Dens are also often close to small springs, where the ground is saturated with water, ensuring that the snakes won't dry out.

DAVID W. HARP (2)

TO ENGAGE SMARTTRAK, FORGET ABOUT IT.

Sometimes an SUV needs extra traction. Luckily, the Bravada® doesn't need you to know when. Its SmartTrak® system is always thinking, immediately sensing slippage and redirecting traction to the tires that need it most. No buttons, no levers. So even when the road is covered, Bravada's got it covered. 1-800-255-OLDS www.bravadasuv.com

THE NEW BRAVADA. IT KNOWS THE ROAD.

GM ©1997 GM Corp. All rights reserved.

Oldsmobile

Timber rattlesnakes, in their varied colorations, are on view at the annual Rattlesnake Roundup in Morris, Pennsylvania.

There is evidence that young rattlers, born just weeks earlier, follow the scent trails of adults to winter dens, thus learning the way. Grown rattlers moved far from their home territory may simply wander in circles for months until they freeze, even though local dens are available. Apparently just any old den won't do; it must be their den, the one they've used since infancy, and recent genetic work suggests that the snakes in each den form something of an extended family, rather than a random sample of local rattlesnakes. (Biologists point out that all these traits make reintroducing rattlesnakes to areas where they've been eliminated, or even restocking places with declining populations, extremely difficult.)

Timber rattlesnakes are, in fact, full of surprises. Earlier this year, scientists announced that a captive female timber rattler had given birth—even though she had been separated from males since her own birth 14 years ago. Such fatherless reproduction, called parthenogenesis, occurs in some lizards, fishes and insects, but it had never been clearly documented before in rattlesnakes, said animal behaviorist David Chiszar of the University of Colorado, who owns the rattlesnake. What's more, parthenogenesis usually results in female babies, while these were all male. While Chiszar and his colleagues have theories about how the snake pulled off the feat, no one is sure exactly how the process works, or what triggers it.

Much of what is known about timber rattler ecology dates from just the past 20 years, thanks to advances in electronic monitoring. In the early 1980s, I was hiking along the Kittatinny Ridge in eastern Pennsylvania when I ran into a bearded, somewhat scruffy man slowly waving what looked like a small television antenna over his head. This is the sort of encounter that makes a hiker wish he'd taken a different trail, but this fellow wasn't a lunatic, he was a scientist—Howard Reinert, one of the first biologists to implant tiny radio transmitters in rattlesnakes and follow them through their daily lives.

Now a professor at the College of New Jersey near Trenton, Reinert continues to study timber rattlers, but he has shifted his attention from the mountain dwellers to the small, endangered population that inhabits the Pine Barrens. These lowland snakes live very different lives from their mountain cousins, basking beside sand roads instead of on rock ledges and wintering in old stump holes deep in white cedar swamps. One day last June, I joined Reinert and student Gylla MacGregor as they made the rounds through a jungle of scrub oak, pitch pine and bogs to check on six rattlesnakes they were monitoring.

Two years before, New Jersey's largest forest fire in a quarter-century had swept through part of their study site, charring 20,000 acres. Because the snakes were still in their hibernacula when the fire struck, none of them were killed, Reinert told me as we followed a meandering deer trail—and it provided a great opportunity to see how those in the burned section would fare, compared with rattlers in the unburned portion. "That's what was so fortuitous. I couldn't have planned a better study," he said.

The first year, Reinert and a colleague found, the rattlesnakes in the burned zone had to cling to what little cover was left, such as regenerating clumps of mountain laurel. But they didn't strike out for lusher surroundings. "Rattlesnakes are long-lived animals that become well established, and they develop a fairly strong affinity for a site," he said. "They seem to get locked into an activity range—they know it, they use it, and they seem extremely reluctant to change it." In other words, they are homebodies.

The snakes' patience seems to have paid off. Now there was little visible sign that a fire had roared through this area. The laurel and scrub oak had regrown into almost impenetrable thickets, and even the blackened trunks of the pitch pines were sprouting tufts of green needles. More important, the place was again full of white-

THERE'S ONLY ROOM FOR YOU. YOUR FAMILY. AND HOWDY DOODY.

Almost every night for six whole months, you could hear your Dad digging in the backyard. No one knew what he was doing. Only that it was your only hope against something called "The Big One". Then, at dinner one night, between gulps of Ovaltine and meatloaf, he burst into the house. It was finished! Oh, it was swell. Bunk beds. Hi-Fi record player. And, golly! A brand-new ten-inch television set! Well, whatever "The Big One" was, you just hoped it would come soon. Hey, you were going to be the only kid on the block to watch Howdy Doody from the top bunk of your very own underground fort.

Over 100,000 bomb shelters were made during the 1950s. Fortunately, none of them were ever used. Experience it as it happened on David Halberstam's **The Fifties**—a world premiere series. Only on The History Channel.

The **FIFTIES**

Premieres Sunday, Nov. 30 at 9PM ET/ 10PM PT

THE HISTORY CHANNEL
WHERE THE PAST COMES ALIVE

Cruise back to the 1950s at
www.historychannel.com/fifties

©1997 The History Channel. A&E Television Networks. All Rights Reserved.

If you don't have The History Channel, call your local cable or satellite company today.

Howard Reinert and Gylla MacGregor implant a radio transmitter, then check the snake's mouth for signs of problems.

footed mice, red-backed voles, chipmunks and other small mammals—the favorite prey of timber rattlers.

A rattlesnake is one of the most sophisticated hunters in the animal world. Although it is, like all snakes, deaf to airborne sound, its vision is acute, and it can sense even delicate vibrations through the ground. Its constantly flicking tongue picks up odor molecules from the air and deposits them in a sensory organ on the roof of the mouth. What's more, the facial pits that give the pit vipers their name are exquisitely sensitive heat receptors, able to distinguish differences of a fraction of a degree—like the difference between a warm mouse and the cool night air.

In the mountains, Reinert found, timber rattlers set a careful ambush, using their tongues to "taste" fallen logs until they find one that mice have been using as a runway. The snake coils beside the log, its head at a right angle to it and its lower jaw resting lightly upon the wood. Then the rattler waits, for days if necessary; snakes have a slow metabolism, and may only eat once every week or two. The snake may even sleep behind its lidless, staring eyes, but eventually the faint vibrations of a scampering deer mouse jolt it awake. Information from the facial pits and eyes merge to paint a picture of the advancing mouse. A blindingly fast strike delivers a massive dose of venom through the hollow, syringe-like fangs, and the mouse leaps away. A few minutes later the snake, relying on its flicking tongue to bring in the scent of the now-dead rodent, tracks it down and begins to eat.

The venom, an exotic brew of complex enzymes, is a hunting tool first and a defensive weapon second, but it is, of course, why rattlesnakes are so widely feared. Rattlers can and do kill people, but not as frequently as you might think. Of the nearly 8,000 venomous snakebites each year in the United States, only a dozen or so result in death—in part because a large percentage of bites are "dry"—that is, the snake chooses to inject little or no venom. (This is also why so many far-out snakebite remedies seem to work.)

Relatively few of those bites are, in the parlance of health statisticians, legitimate, the result of an accidental encounter with a wild snake. Most come from people handling, catching, playing with, showing off around, trying to kill or otherwise goofing off with a venomous snake. More than 70 people have died in this century, largely in the southern Appalachians, as a result of handling snakes during religious services. What's more, most of the snakebite fatalities in the United States involve the larger or more potently toxic species of the South and Southwest, such as the eastern and western diamondback rattlers.

"Look," said Shiels about his home state of Pennsylvania, "we have a population of 12 million people, and out of that we have one or two venomous snakebites a year. And I don't know *when* we've had a fatality—certainly not since we've been keeping records in the past 10 or 20 years."

Timber rattlesnakes, Reinert and other researchers say, usually take a live-and-let-live attitude toward humans, as I found out myself. We were following MacGregor, who was swinging a radio antenna from side to side, sweeping the ground around her, trying to locate No. 940207, a two-foot-long male. "I know he's here somewhere," she said, stopping and backtracking a few feet. "He was right under this laurel bush yesterday."

"Look there, Gylla," Reinert said with a slight smile, pointing to a spot near her left foot. The yellow-phase snake, cryptic against the dead oak leaves, was curled within six inches of her boot. It never moved, never rattled, never made the slightest sign of anger or alarm. Later in the day, we all unwittingly walked within two feet of a thick 45-incher that didn't stir a muscle in protest, even when Reinert knelt beside it to slide a thermometer next to its coils.

"I've encountered literally thou-

DAVID W HARP (2)

"When I was in high school, my physics teacher—whose name was Mr. Bader—called me down one day after physics class and said, 'You look bored; I want to tell you something interesting.' Then he told me something which I found absolutely fascinating, and have, since then, always found fascinating."

Richard Feynman
Nobel Laureate

Give a gift that will fascinate a young mind about science and math.

Imagination is more important than knowledge," Einstein once remarked. Human genius and creativity stem from our imagination. That's why *Atom* (for ages 9-12) and *Cogniz* (for teens) aim to stimulate the reader's imagination.

In today's world, science literacy is essential to share in the excitement of all the advances that have spawned from the human need to explore, discover and comprehend nature. *National Science Education Standards* describes an individual's development of scientific literacy as having "different degrees and forms; it expands and deepens over a lifetime . . . the attitudes and values toward science in the early years will shape a person's development of scientific literacy as an adult."

In the early years, if we fail to stimulate and fascinate the young mind in math and science, then we have missed a great opportunity. Give a gift subscription of *Atom* or *Cogniz* to a kid or teen in your life for only $25 (6 issues) per year.

For credit card orders
call toll-free
1-888-397-5264

ATOM
COGNIZ

YES! I want to buy a gift subscription. I'll pay just $25 for a one-year subscription (6 issues) to either *Atom* or *Cogniz*.
❑ Atom (for ages 9-12) ❑ Cogniz (for teens) ❑ Both
Method of payment: ❑ American Express ❑ Visa ❑ Master Card ❑ My Check is enclosed ❑ Bill me
Mail order & payment to: New World Publishers P. O. Box 7216, Austin, TX 78713

CARD NUMBER EXPIRATION DATE

SIGNATURE

SEND TO:

CHILD'S NAME AGE

ADDRESS

CITY STATE ZIP

BILL TO:

NAME

ADDRESS

CITY STATE ZIP

The child will receive a gift card announcing the arrival of *Atom* or *Cogniz*. The first issue will arrive in 6-8 weeks.

SN

Stretchable skin and a lower jaw that extends both down and out allow a timber rattler to swallow a supersize meal.

sands of snakes over the past 20 years, and I can count on one hand the number of times I've been rattled at," Reinert said. Legend and misconceptions aside, he said, the timber rattler is a fairly docile animal, remarkably tolerant of humans—certainly far more tolerant than we have been of it.

Still, it's a hard sell to convince the general public that rattlesnakes are valuable members of the environment. Even in states where the snakes have legal protection and hefty fines are levied for killing them, natural resource agencies recognize the need to make concessions to homeowners who might not want venomous snakes crossing their yards. Some provide hotline numbers, and experts (often volunteers) who will promptly come and move the snake to another, nearby location. In New York, researchers have worked with homeowners to design low, snake-proof fences to keep the rattlers out of yards.

Yet Reinert, Brennan and others sense a softening of public attitudes toward rattlesnakes. "I think it's similar to the wolf," Shiels said. "Wolves represent wilderness, and maybe timber rattlesnakes represent wilderness to some people—they certainly do to me. You don't find them in strip malls; they're an animal that doesn't live very well with people and needs wild places to survive."

While the debate over rattlesnake hunts attracts public attention, the greater threats to timber rattlers are more insidious—especially habitat destruction and fragmentation. In southern New England and the Middle Atlantic states, housing developments chew ever deeper into rattlesnake country, chopping ancestral territories into pieces. In the Pine Barrens, the snakes have been isolated in widely separated areas, and there is evidence that they might be suffering from low genetic diversity, perhaps due to inbreeding. And while Reinert's study site is a protected state wildlife area, it is crisscrossed by sand roads that are used as shortcuts by local drivers. The pregnant female rattlers often bask beside the roads, where a number are hit each year—and Reinert is especially concerned now that big, gravel-hauling tractor-trailers have begun using the routes. Several times, as we sat in the shade of the cedars beside a quiet creek for lunch, the earth rumbled as another of the behemoths thundered by. "Our biggest recommendation to the state was that they close off these sand roads. We've tried to get the town to do it, but they won't go for it," he said.

Meanwhile, there's a great deal left to be discovered. For instance, how does a rattlesnake unerringly navigate, across miles of tangled terrain, from its winter den to hunting territory to basking sites? Does it use scent, or the earth's magnetic field? Polarized light, visual landmarks or the sun and stars? Another puzzle: Reinert has found that young rattlesnakes in the Pine Barrens sometimes shadow their older counterparts, following their movements as if to learn the best locations for food or denning. One possibility is that the young snakes are following their own fathers—quite a feat of kin-recognition, since male rattlers play no role in reproduction after mating and are long gone by the time the young are born a year later.

"That's fascinating in an animal that we usually think of only as an eating machine. But there's more going on in their heads than hunting," Reinert said. "You know,"—he looks slightly embarrassed—"I talk to them when I'm alone. I know they can't hear me, but it's a matter of respect—I've come to know them as individuals, with their own characteristics and idiosyncrasies. I'm truly grateful to them for the information and entertainment they've provided me over the years."

Natural history writer Scott Weidensaul is completing a book about bird migration. David Harp shot the December 1996 story on the Smithsonian Tropical Research Institute. Carl Hess has been photographing timber rattlesnakes extensively since 1986.

CARL A. HESS

Explore Mexico's endless history.

Enjoy the thrill of discovering Mexico and its rich history. Here at Monte Alban, in the State of Oaxaca, you can almost feel the energy of centuries past.

Come to Mexico and discover our endless history and culture. Start in Mexico City by exploring our Museum of Antropology. Discover along with us, the Templo Mayor, an Aztec ruin buried by centuries of civilization, beneath the very center of our city. Discover our Mayan ruins on the Yucatan Peninsula, or the many secrets of our still unexplored archaeological sites. Call 1-800-44-MEXICO or visit our www site. We'll tell you more about the many discoveries and adventures you have to choose from. Come to Mexico today. Your choices of discovery are endless, and your dollar is worth so much more. It's a discovery vacation you'll never forget.

Make discovery a family affair. Share the amazement of historical sites like Chichen Itza, located on the Yucatan Peninsula, just a few miles from our Caribbean coastline.

For more information, call:
1-800-44-MEXICO
or **http://mexico-travel.com**

Mexico.
An Endless Journey.
Come discover it.

MEXICO

INTRODUCING THE NEW JEEP® GRAND CHEROKEE 5.9 LIMITED, THE WORLD'S FASTEST SPORT UTILITY VEHICLE.

When you think about four-wheel drive capability, speed isn't the first thing that usually comes to mind. Unless, of course, you're being chased across the Serengeti by a herd of hostile wildebeest. Then you'll want the exceptional speed and capability of the new 1998 Jeep Grand Cherokee 5.9 Limited.

Never before has a Jeep vehicle offered so much power in such an attractive package. Its massive 5.9 litre 245 horsepower V8 engine takes you from 0 to 60 mph in just 7.0 seconds. Couple that with the 5.9 Limited's exclusive Quadra-Trac® four-wheel drive system, and you'll have the ability to outrun the fastest beasts

Always use seat belts. Remember, a backseat is the safest place for children. Jeep is a registered trademark of Chrysler Corporation.

No matter what type of rugged terrain they travel.

Of course, all that power isn't tamed by the 5.9 Limited's luxurious amenities. Like the rich, supple leather that covers everything from the heated front seats to the door-trim panels to the armrests.

For further information about our newest and most powerful Jeep vehicle, simply place a quick call to 1-800-925-JEEP or visit www.jeep.com on the Internet.

The new Jeep Grand Cherokee 5.9 Limited. It not only has the power to get you into extraordinary situations, it also has the speed to get you out.

Jeep

THERE'S ONLY ONE

MUTINY ON THE

AMISTAD

IN 1839, AFRICAN FREEMEN, SEIZED AS SLAVES, STRUCK A DARING BLOW FOR FREEDOM

BY DONALD DALE JACKSON

THE NEWS STORIES THAT began in late August 1839 bore a whiff of both mystery and menace. A "long, low, black schooner" was sailing an erratic course up the East Coast of the United States, manned by what appeared to be an all-black crew, destination unknown. The ship looked ravaged—the sails were tattered, barnacles cluttered the sides—but the crew seemed skittish about accepting help of any kind. The men, who spoke no English, brandished cutlasses when other vessels offered to take them in tow. The name on their battered bow was *Amistad*.

That vessel is about to become a household name, with the opening this month of *Amistad*, director Steven Spielberg's epic film saga of this dramatic moment in American history. "While making this film," Spielberg says, "I never felt that I was telling someone else's story. I felt very much that I was telling everyone's story—a story that people of all nationalities and races should know."

The ship dropped anchor off Culloden Point near the eastern end of Long Island on August 25 to let a boatload of men go ashore in search

In muralist Hale Woodruff's 1940 depiction, African captives rise up in revolt against Cuban slavers carrying them to bondage.

Having steered an erratic course from Cuba, the schooner *Amistad* anchored off Long Island in August 1839. After mutineers rowed ashore to barter for supplies, the USS *Washington*, left, appeared. Naval officers from that vessel took all the Africans into custody.

of food and water. Encountering two ship captains, they managed to ask, with the help of some creative pantomime, what country they were in and whether the people there had slaves. They made it known that they were from Africa and needed someone to help them sail home.

Negotiations broke off until the next morning, when a U.S. Navy survey brig, the *Washington*, hove into view. The brig's commander, Lt. Thomas Gedney, suspecting piracy or smuggling, sent a party aboard the *Amistad* who disarmed the blacks and also seized the men ashore. The sailors discovered three others on the ship—two Cuban planters, Pedro Montes and José Ruiz, and a teenage cabin boy. From them, particularly Ruiz, who spoke English, came the first details of what would become a drama that mesmerized the country.

The *Amistad*, Ruiz said, had departed Havana on June 28, bound for Cuba's north coast. The 53 blacks on board were slaves, 49 men belonging to Ruiz and four children owned by Montes. The Cubans had purchased them at the Havana slave market and were taking them back to their homes, along with a cargo including fruit, wine, saddles, cotton and silk. On the fourth night out the slaves somehow freed themselves from their irons and attacked with cane knives they found in the hold, killing the captain and the mulatto cook and injuring Montes. Two seamen escaped in a boat. Led by a strong-looking man in his 20s whom the Spanish called Cinque, the slaves took command of the ship and ordered the wounded Montes, a former mariner, to steer for Africa. Montes tricked them by sailing east toward Africa in daylight but heading north at night.

What Ruiz did not say was that the recently imported Africans had been brought to Cuba, a Spanish colony, in direct violation of a Spanish law against the slave trade. In Cuba, as in the United States, slavery was legal but importing slaves was not. With nighttime landings and falsified documents approved by corrupt officials, Spanish slavers eluded the British ships that tried to enforce the ban. (Spain and Britain had signed a treaty banning the slave trade in 1817. America had done so in 1808.)

By the time the *Amistad* ended its zigzag voyage, off Long Island, only 43 of the original 53 blacks remained alive; the others had either starved, perished in the mutiny or died because thirst drove them to drink medicine found in the cargo hold. Cinque was the unquestioned leader. When sailors boarded the ship, he had leapt overboard and tried to escape. After he was recaptured he tried to rally the others with an impassioned speech. "He is said to be a match for any two men," an early news account said, "evincing uncommon decision and coolness, with a composure characteristic of true courage."

Lieutenant Gedney took the ship and the 43 Africans into custody. He brought them to New London, Connecticut, where, at a preliminary hearing, federal judge Andrew Judson ordered the men held on charges of murder and piracy and the children detained as witnesses. The Africans, unable to speak or understand their

ABOVE & PP 114,115 NEW HAVEN COLONY HISTORICAL SOCIETY

accusers' language, sat mute and uncomprehending.

The judge ordered the prisoners confined at the county jail in New Haven, where they occupied several rooms above a tavern across the street from the green. Cinque, regarded as more dangerous than the others, was placed in irons in a separate cell. As jails go, the New Haven lockup was relatively relaxed; the jailer took the children on a wagon ride and allowed the men a daily outing on the green, where their somersaults and acrobatic leaps startled staid New Englanders. Several of the Africans still suffered from disease, and three died in September from what was probably dysentery.

To most of the people who flocked to the jail to gawk at them (for a fee of 12½ cents) the *Amistad* captives were a bit of exotica suddenly dropped in their midst, but one group instantly saw them as a cause. Abolitionists were a weak and fragmented band of true believers in the America of 1839, a persecuted minority on the political fringe. But in these Africans, abolitionist leaders saw a way to humanize the issue of slavery and broaden the campaign against it. Lewis Tappan, a merchant and abolitionist leader from New York, wrote a friend that the *Amistad* capture was a "providential occurrence." He had long thought "that the heart of the nation would not be effectually touched except through the power of sympathy."

Within a few days of the Africans' capture, the "Amistad Committee" was organized, letters seeking donations were in the mail, and several prominent lawyers, led by Roger Baldwin, a future governor of Connecticut, had signed on to defend them. Joshua Leavitt, editor of the antislavery newspaper *Emancipator*, visited them and reported that they were treated well and that all appeared to be "of quiet minds and a mild and cheerful temper." Other supporters launched a search for someone who spoke their language (most of the Africans came from what is now Sierra Leone and spoke Mende).

The Spanish government, in the meantime, weighed in on the other side. On September 6 the Spanish minister to the United States wrote Secretary of State John Forsyth requesting the immediate return of the ship and prisoners to Cuba, where the Africans could be tried for murder and, if convicted, would be hanged or burned. The minister pointed out that the *Amistad* mutiny took place on a Cuban vessel traveling between Cuban ports and was thus beyond the jurisdiction of American courts. He cited a 1795 treaty between the United States and Spain in which both countries agreed to return property that by "urgent necessity" turned up on the other's shore. Forsyth waited ten days before replying, and then said only that he was awaiting a decision from President Martin Van Buren.

With a trial scheduled to begin in mid-September in Hartford, the real combatants in the case were now coming into focus. On one side was the Spanish government, acting through the administration in Washington; on the other was the slowly growing movement for the abolition of slavery in America.

Van Buren, a Democrat from New York, was primarily concerned with his prospects for reelection in 1840, which required the support of pro-slavery Southerners. Confronting what he saw as a no-win situation, Van Buren wanted the case to go away, an opinion shared by United States Attorney William Holabird of Connecticut. "I suppose it will be my duty to bring them to trial," he wrote ruefully to Forsyth, "unless they are in some other way disposed of." The easiest way to "dispose of" them was to return them to Cuba.

The public was becoming captivated by the men from Africa. By one estimate as many as 5,000 people a day were filing through the jail to stare at them. Lewis Tappan was visiting when Cinque, "his bearing like another Othello," was permitted to meet with the others. "They shouted for joy on seeing him," Tappan reported, but Cinque did not seem to share in the jubilation. During a conversation with Tappan and an African he brought along to interpret, the black leader drew his hand across his throat and asked whether the Americans would kill him and the other prisoners. The possibility was on their minds. Some were frightened when they watched a martial ceremony

Among the *Amistad* captives were (from top): Marque, one of three young girls; Banna, who would thank his defenders for deliverance from "Wicked men"; Kale, age 11.

from their cell windows, fearing that they were about to be executed.

In the five months between their seizure in August and their district court trial in January, the "Amistads" became a national sensation. A play titled *The Black Schooner, or the Pirate Slaver Amistad* was presented as early as September 2, only a week after their capture. The quickie drama netted $1,650 in its opening week at the Bowery Theater in New York. The owner of a wax museum made life masks of the Africans. A color portrait of a handsome Cinque, carrying a staff and standing in a landscape the New England artist imagined to be African, was reproduced in engravings and sold on the streets. Another artist painted a 135-foot-long panoramic mural, now lost, titled *The Massacre on board the schooner Amistad*, depicting "26 of the principal characters" engaged in murder and mayhem.

But if many were sympathetic to the Africans, there were plenty of others among the American press and public with only contempt for them. Cinque, one journalist declared, was "as miserably ignorant and brutalized a creature as the rest," while another writer expressed the common view that the only proper relation of blacks and whites was as slaves and masters.

The court system of 1839 called for the defendants to appear first before a United States Supreme Court justice sitting as a circuit court judge, who would rule on the charges of murder and piracy. The district court would deal separately with salvage and property claims, including the question of whether the Africans were property. As the trial approached, excitement ran so high that crowds lined the canal to get a look at the boat carrying the captives to Hartford.

Baldwin and two other sympathetic lawyers, Seth Staples and Theodore Sedgwick, Jr., represented the Africans—enough legal firepower, one reporter observed, "to delay anything till the end of the earth." Their first move was to ask Judge Smith Thompson for a writ of habeas corpus freeing the children, who were not accused of any crime. This was a test of whether the circuit court was willing to treat them as persons and not property. The three girls were so frightened that they burst into tears on entering the courthouse.

Prosecutor Holabird asked the judge to turn all the prisoners over to the administration and let the President decide whether to send them to

One scene from Spielberg's film version of the *Amistad* saga depicts the moment when the Africans' leader, Cinque (center, in chains, played by Djimon Hounsou), and his fellow captives are brought, under guard, before a court in Connecticut, in 1839.

ANDREW COOPER/DREAMWORKS

TECHNOLOGY UPDATE

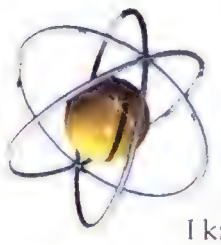
You can buy a Rolex®...but for $99 you can get a clock that's even more precise!

New Zeit Clock by Arcron uses radio signals from the U.S. Atomic Clock in Colorado to display the precise time, within a billionth of a second.

Wall Clock

Desktop Alarm Clock

by Jake Prine



These days, timing is everything. Between meetings and appointments, deadlines and conference calls, my schedule requires that I know the time down to the minute. Even on weekends, I've got Little League games to coach, shows to tape and planes to catch. If I'm late, I'm sunk. The problem is that it's hard if my clocks aren't correct. Even the digital clocks can display time inaccurately. Power outages, dead batteries, time changes...any of these can cause a clock to be inaccurate. The next thing you know, you're strolling into that important conference...an hour late. Now there's no need to worry, because advanced radio technology has produced a clock which gets the time directly from the U.S. Atomic Clock in Fort Collins, Colorado, the standard for time-keeping the world over. The Atomic Clock by Arcron is the most accurate, reliable and convenient timepiece you can buy.

The most accurate clock on Earth. Every morning at 1:00 a.m., this "smart" clock tunes in to the radio time signal emitted by the U.S. Atomic Clock in Colorado and automatically resets itself to the exact hour, minute and second. The U.S. Atomic Clock is accurate to ten billionths of a second per day. Using molecular technology, it measures the vibration rate of atoms—a constant—to calibrate time. This means that the clock deviates less than one second over a one million year period! The Atomic Clock even adjusts automatically for daylight savings time, so you don't have to remember to "spring forward" or "fall back". This clock is the only atomic clock with an internal calibrator that creates "intelligent" adjustments based on the latest signal readings. The desktop model is the only clock that will not lose time with low power or when you change its batteries.

Every morning at 1:00 a.m., this "smart" clock tunes in to the radio time signal emitted by the U.S. Atomic Clock in Colorado and automatically resets itself to the exact hour, minute and second. The U.S. Atomic Clock is accurate to ten billionths of a second per day.

An easy time. The most accurate clock in the world is of no use if it is difficult to operate. The Arcron Atomic Clock is engineered in Germany using the latest scientific technology. It comes in two styles, the wall clock and the executive desktop model. Both are designed to be functional *and* easy to use.

The desk clock's display features the exact time (in hours, minutes and seconds), month and date, or you can choose to display any two U.S. or world time zones. It features a sleek, European design, and, at only eight ounces, is the perfect travel clock. It also has dual alarms, perfect for couples, and one-touch illumination for nighttime viewing.

The handsome wall clock comes with temperature and humidity gauges. After you install the batteries, watch the hands spin at 20 times their normal rate, until the clock has adjusted to the precise time. Both the executive desktop and the wall model have an internal antenna for superior reception sensitivity, without unattractive wires.

Imagine having the ability to know the exact time, all the time. The Atomic Clock probably costs less than most of the clocks and watches you own, but you'll be able to use it to set them all correctly. Isn't it about time you had a clock you can trust?

The time to buy is now! Act now and you can own the world's most precise timepiece. Both the executive desktop and the wall model come with a one-year manufacturer's limited warranty and Comtrad's risk-free home trial. If you are not completely satisfied, return your purchase within 90 days for a full "No Questions Asked" refund.

*Rolex® is a registered trademark of Rolex of Geneva Corporation.

Atomic Wall Clock. . . . . $99 $8 S&H
Atomic Desktop Alarm Clock . . . . $99 $8 S&H

Please mention promotional code 2762-12116.

For fastest service call toll-free 24 hours a day

800-992-2966

To order by mail, send check or money order for the total amount including S&H. To charge it to your credit card, enclose your account number and expiration date

Virginia residents only—please add 4.5% sales tax.

comtrad industries

2820 Waterford Lake Dr., Suite 102
Midlothian, Virginia 23113

Cuba or Africa. Baldwin wanted to know how the United States government came to speak for Spain. He then raised the larger questions of color and slavery. It was only because of their color, he said, that anyone presumed they were slaves. They had in fact come here for asylum, and "I say there is no power on earth that has a right again to reduce them to slavery." The United States was not a "slave-catcher for foreign slave-holders."

But Judge Thompson was having none of the abolition debate. To him the question was not freedom but jurisdiction. After three days of arguments he ruled that United States courts had no jurisdiction in the murder and piracy charges because the alleged crimes had occurred on a Spanish ship in Spanish waters. This meant that the Africans were no longer charged with a crime. But were they "property"? This, the judge said, the district court would decide. Since the property issue still remained unresolved, he denied the habeas corpus request. Judge Judson of the district court now took over; the next step, scheduled for November, was the trial on the property issue.

The abolitionists still needed a good Mende speaker. In early October, Prof. Josiah Gibbs of Yale University, an expert on Hebrew and other languages, made a breakthrough. Gibbs first learned to count in Mende by putting pennies in different quantities before the prisoners, discovering that *eta* meant one, *fele* two and so forth. He then went to the New York waterfront, stopped every black seaman he saw and counted to ten in Mende. He finally found James Covey, an ex-slave and seaman on a British warship who spoke Mende. Gibbs took him to New Haven where they met the captives at breakfast. When they heard him speak their language, an observer said, "breakfast was forgotten and all

This masterful 1840 portrait of Cinque was commissioned by a black abolitionist.

seemed overwhelmed with joy, all talking as fast as possible."

Now, at last, they could tell their stories. They said that they had been taken from their home villages in West Africa for different reasons—some kidnapped, some captured in wars or sold to pay debts, in some cases by other Africans. They were marched in chains to the slave port of Lomboko and crammed on a Portuguese slaver where they were fed sparingly and forced to sleep chained together in a hideous four-foot-high hold. Landing at night in Havana, they were taken to the "barracoon," or slave market, where Ruiz and Montes bought them. On the *Amistad* the mulatto cook told Cinque, apparently as a cruel joke, that their owners planned to eat them. This, one African said, "made our hearts burn." Cinque found a nail on deck and used it to break the chain that fastened all of them to the wall. They then freed themselves, found the cane knives, and struck for their freedom.

The man who would become their most important defender was at this point still just an interested spectator. "That which now absorbs a great part of my time and all my good feelings," former President John Quincy Adams wrote in his journal that October, "is the case of . . . African negroes taken at sea." The brilliant and fiercely independent Adams, a leading foe of slavery who was detested in the South yet was skeptical of the abolitionists as fanatics, was at the time a 72-year-old congressman in the twilight of a magnificent career in which he had been a senator, diplomat and Secretary of State as well as President. "Old Man Eloquent," as he was called, researched the law on the *Amistad* case but confessed that he still had more questions than opinions, though his sympathy was engaged. In a letter published almost two months later, he wrote that the Africans had been "cast upon our coast in a condition perhaps as calamitous as could befall human beings." After chronicling what had happened to them since, he asked, "Is this compassion? Is it sympathy? Is it justice?"

In November, Judge Judson postponed the district court trial to January. In the meantime, a new and critical witness for the Africans appeared. Dr. Richard Madden, an abolitionist who had served as the British anti-slavery commissioner in Cuba, had volunteered to tell the American court how Cuban slavery worked. Testifying in the judge's chambers, the Irish-born Madden explained that the Cubans circumvented the ban on the slave trade by fraudulent documents for which officials collected $10 per slave. Cubans classified slaves in two categories: *ladinos*, who had been in the country long enough to learn Spanish, and *bozales*, who were newly arrived from Africa. The *Amistad* blacks had been deliberately misclassified as ladinos to deceive British inspectors who might check their papers. Madden told the judge that 25,000 Africans had illegally entered Cuba in the past three years. An impassioned advocate who had described Cuban slavery as the most ter-

This is where we come in

Somewhere around 200 trips to work, 23 runs for groceries, or 10 trips to the lake, it's time for 1 trip to the dealership with your Ford, Mercury or Lincoln for Quality Care scheduled maintenance. Your vehicle will be thoroughly checked and safety-inspected according to precise specifications. By people specially trained and equipped to work on it. So take your vehicle to the place it all began. For Quality Care, see your Ford or Lincoln-Mercury dealer. It's a short trip that pays off in the long run. To learn more, visit us at www.qualitycareservice.com

From Ford and Lincoln-Mercury dealers

©1997 Ford Motor Company

QualityCare
at your service

In another panel from the Woodruff mural, actually a composite of several courtroom incidents, the Cuban slaver Montes points an accusing finger at mutineer Cinque (standing, center) as defense lawyers Baldwin (in glasses) and Tappan confer.

rible form of that evil in the world, Madden had one more point to make: the return of the *Amistad* blacks to Cuba would mean certain death.

The throng that squeezed into every seat in Judson's New Haven courtroom on January 7, 1840, showed that the public's fascination with the *Amistad* drama remained intense. The Africans arrived in coats and mufflers provided by their defense committee. Students from Yale's law school and theological seminary sat in the audience. It was evident that the government's task—proving the defendants were property—would be difficult. Witnesses testified that Ruiz—now back in Cuba—had admitted that the captives were newly arrived from Africa, thus in effect acknowledging that they were not legal slaves.

The man the crowd was waiting for appeared on the second day. Cinque gave his evidence with Covey interpreting, while the spectators listened with what one described as "breathless attention." He told of his capture in Africa and the voyage in the slave ship, demonstrating by sitting on the floor the painfully awkward position the Africans had to maintain, trussed in manacles, their hands and feet bound together. The audience's reaction was "instantaneous silence and solemnity," a newspaper said. Cinque went on to describe their arrival in Havana, the slave market and the way Ruiz felt their bodies before buying them.

As he testified, the U.S. Navy schooner *Grampus* sailed for New Haven Harbor, secretly dispatched by the White House with instructions to load the Africans aboard and depart for Cuba immediately following the anticipated verdict against them. The commander's orders were to retrieve the defendants as soon as the court ruled, without waiting for an appeal by the defense, a clear violation of judicial process and their rights. Van Buren's anxiety about his reelection—he eventually lost to William Henry Harrison—was apparently growing desperate. Reports surfaced later that the abolitionists also had a ship waiting in the harbor to rescue the Africans if the decision went against them.

But by the time Roger Baldwin made his closing argument it seemed clear that the abolitionists had prevailed and that neither side needed an escape ship. Judge Judson had signaled his attitude early by declaring that "it was idle to deny" the captives were from Africa—and thus legally free. In his decision following a week-long trial, he said that they were "born free and ever since have been and still of right are free and not slaves." They had been seized in violation of "their own rights and of the laws of Spain."

The overflow crowd outside the courthouse got the news as the con-

testants emerged. The judge ordered them to be delivered to President Van Buren for transport back to Africa. The judge even managed a sort of benediction: "Cinque and Grapeau [another prisoner who testified] shall not sigh for Africa in vain," he proclaimed. United States Attorney Holabird filed an immediate appeal as the *Grampus* quietly left the harbor.

With the case now headed for the Supreme Court and not due to be argued there until early 1841, the deliberations entered a new arena. In Congress, John Quincy Adams pressed successfully for a resolution compelling the government to publish its correspondence with Spain on the *Amistad* affair, including the order to the *Grampus*. When abolitionists approached Adams to argue the case in the high court—they tried to enlist Daniel Webster first—he reluctantly consented after first pleading "age and inefficiency." For this cause, "for the progress of human emancipation," he was still ready for a fight. "My conscience presses me on," he wrote.

Adams and Baldwin visited the Africans in November at a house their friends had found for them in Westville, near New Haven. Still in custody, the men slept in a row of bunk beds in a single 30-foot-long room. They were studying English and Christianity under the tutelage of Yale students, but the acerbic Adams found their Bible-reading demonstration "very indifferent." The youngest of the male Africans, an 11-year-old boy named Kale, had nevertheless learned to read and write well enough to compose a remarkable letter to Adams. "Dear Friend Mr. Adams," he began, "I want to write a letter to you because you love Mende people and you talk to the grand court. . . . We want to ask the court what we have done wrong. What for Americans keep us in prison? . . . Mende people have got souls. We think we know God punish us if we tell lie. We speak truth. All we want is make us free."

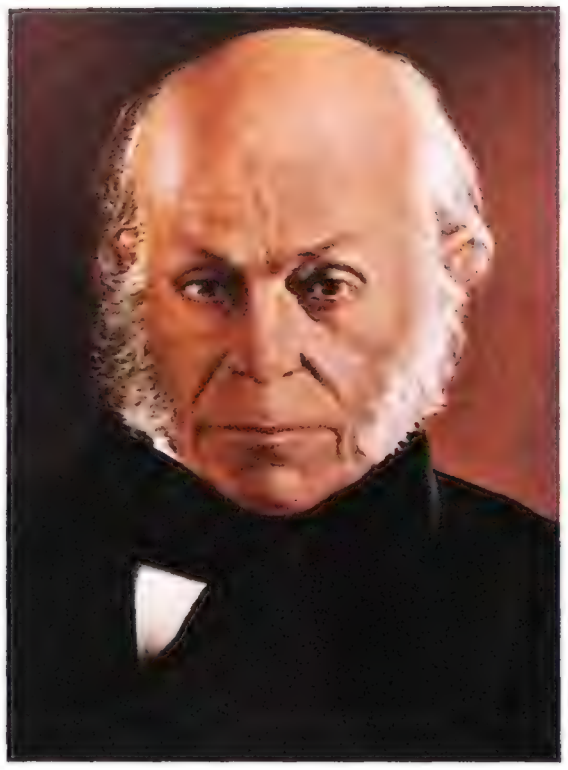
In December Adams began preparing his Supreme Court argument, which he viewed as an attack on "the abominable conspiracy of this government against the lives of those wretched men." His main anxiety, he wrote in his journal, was that he would lose his self-possession in "overheated zeal." Arguments began in the Court's crowded chamber in the Capitol on February 22, 1841, led off by Attorney General Henry Gilpin, followed by Baldwin.

Adams' turn came on the 24th. "I had been deeply distressed and agitated till the moment when I rose," he wrote, "and then my spirit did not sink within me." Ralph Waldo Emerson once praised "the wonders [Adams] could achieve with that cracked and disobedient organ"—his

voice—and Adams employed it now to deliver an address full of fire and controlled indignation orchestrated in symphonic cadences. He focused on the administration's self-appointed role as Spain's agent. We had offered not justice to "these poor, unfortunate, helpless, tongueless and defenseless Africans" but sympathy to their oppressors, "sympathy with the white, antipathy to the black." The Spanish, he continued, demanded that the President "first turn man-robber . . . next turn jailer . . . and lastly turn catchpoll and convey [the captives] to Havana to appease public vengeance—the vengeance . . . of African slave-traders despoiled of their prey and thirsting for blood." It was wrong of Gedney to seize them, wrong of the court to jail them, and unconscionable to return them to Cuba with government connivance.

When Adams returned the next day, he learned that the case was recessed for a week. When he resumed on March 1 he zeroed in on Van Buren's order to the *Grampus*. "Was ever such a scene of Lilliputian trickery enacted by the rulers of a great, magnanimous, and Christian nation?" he demanded scornfully. He closed with a valedictory, mentioning that he had first argued in the Supreme Court in 1804 and stood there now "I trust for the last time." He invoked the names of the great judges—now "Gone! Gone! All gone!"—before whom he had appeared.

Eight days later the Court delivered its verdict. With one dissent the justices found for the *Amistad* prisoners. Justice Joseph Story (played in the film by retired Supreme Court Justice Harry A. Blackmun, delivering a cameo appearance) read the decision. The court declared that the blacks had never been lawful slaves and that they were kidnapped and illegally transported to Cuba. Their mutiny was an act of self-defense. The Court reversed Judge Judson in only one particular: the "Amistads" were not remanded to the President to be returned to Africa, they were on their own—free men.



"Dear Friend Mr. Adams, I want to write a letter to you because you . . . talk to the grand court. . . . All we want is make us free."

The decision, made on narrow legal grounds, set no important precedent and did nothing to change the status of slaves in America; the notorious Dred Scott ruling, which affirmed that slaves were property, came 16 years later. The importance of the *Amistad* case was rather its effect in lifting the consciousness of the American people and the enhanced respectability it gave to the abolitionist cause. As Lewis Tappan had predicted it would, the case had touched American hearts. The Africans took the news of their victory with what one onlooker described as a "christianlike and dignified gladness." In command of their own destiny for the first time in two years, all chose to return to Africa.

Their abolitionist patrons increased their religious instruction to six hours a day with the idea that they would become missionaries. The specially built barn they moved into in Farmington, Connecticut, even had a classroom for the purpose. Adams and Tappan tried to get President John Tyler to furnish a ship for their voyage home, but Tyler ignored them. They decided to raise money for a chartered ship through a fundraising tour. By November they had enough for passage on the bark *Gentleman*.

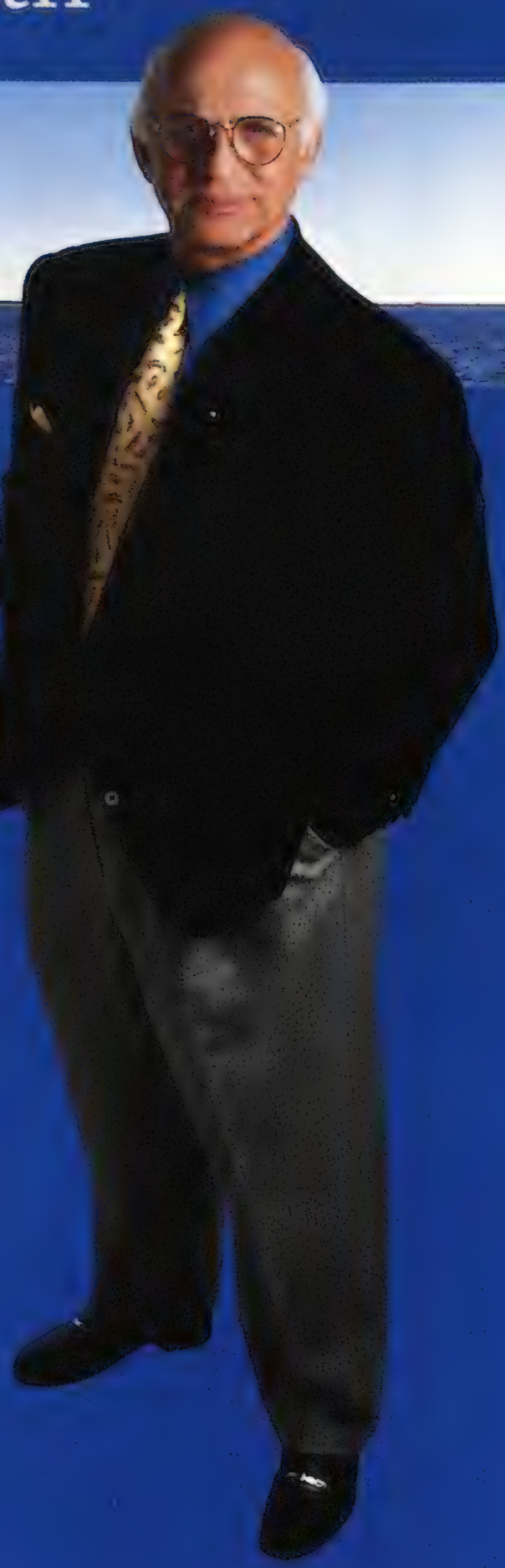
Thirty-five of the original 53 were going home (another four had succumbed to disease; one had drowned in Farmington under circumstances some believed suggested suicide). With them were four Americans assigned to establish a mission in Mendeland. More than a hundred people rose before dawn to bid them a tearful farewell in Farmington. A few nights later there was a final meeting in New York. Cinque made his last appearance before an American audience. The Africans presented a Bible to John Quincy Adams in absentia. On November 27, 1841, they sailed out of New York for Sierra Leone.

Of the *Amistad* Africans only one ever returned to America, a young girl who came back to attend college at Oberlin, in Ohio. The others dispersed, some working at the mission set up by what came to be called the American Missionary Association and others returning to their home villages. Cinque spent some time at the mission and may have supported himself as a merchant. Most of his family, he discovered, had disappeared, perhaps killed in tribal warfare or taken themselves as slaves. On the day he left America, Cinque had promised well-wishers that he would take care of the missionaries in Africa. "Mende people do well," he said, "but not all. Some bad people, same as here."

Frequent contributor Donald Dale Jackson delved into a number of dusty archives during his writing of this article.

Chart A New Course

For Your Health



"What you may not know about **diabetes** is that it is one of the **leading causes** of impotence in the U.S. The good news is that today, with **new and effective** treatment options, just a visit to the doctor can help improve the **quality** of your life. For more information, call our confidential toll-free number: **1-800-835-9021** and **chart a new course for your health**."

-Gavin MacLeod, Actor

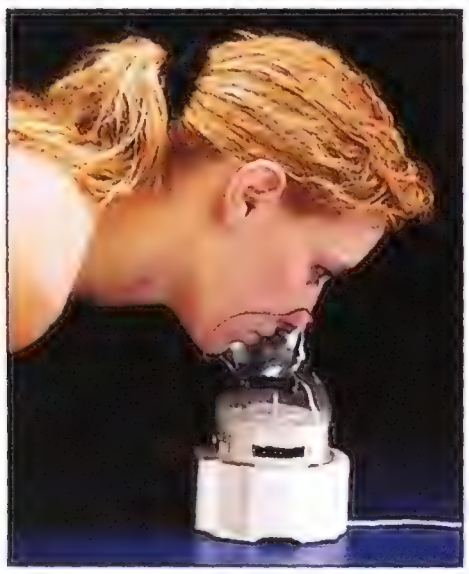
CHART A NEW COURSE
For Your Health

The "Chart A New Course For Your Health" campaign is sponsored by the American Foundation for Urologic Disease and the Foundation's Sexual Function Health Council. An educational grant to fund this program has been provided by VIVUS.

OUT DAMN PLAQUE

Hate to floss? It's awkward and cumbersome. And automatic flossers, while making it easier, cost a bundle! And no matter how often or how well you floss, you're only doing half the job -- removing plaque from between the teeth -- not from the sides nor those hard to reach periodontal pockets where the bacteria that cause gingivitis and gum disease flourish. Introducing *SoniPick*™ -- the advanced sonic powered flossing device that does the job quickly, gently and completely. SoniPick's unique design removes plaque from between teeth and deep from within the facial and lingual pockets where the bacteria that cause gingivitis and gum disease hide. Developed by the makers of the UltraSonex toothbrush, SoniPick uses a single tuft of multiple cleaning filaments (about 25) vibrating orbitally at an astounding 18,000 strokes per minute. The cleaning tuft slips easily between even the tightest teeth and gently into gum pockets. It then fans out, whisking plaque from between the teeth and from deep within the gum pockets. *No other flossing method, string floss or automatic, can do this!* Includes three sets of sized cleaning tips - thin, medium and thick - for thorough and gentle cleaning between teeth and all gum surfaces. Ideal for cleaning braces, bridges and dental implants. And the best news of all -- *The SoniPick costs just a fraction of those other automatic flossers!* Use the SoniPick and then visit your dentist. You'll both be amazed. ***$34.95*** ($6.95) #9160 includes 30 cleaning tips, stand and AA battery. Replacement Cleaning tips (30) ***$12.95*** ($2.95) #9170.

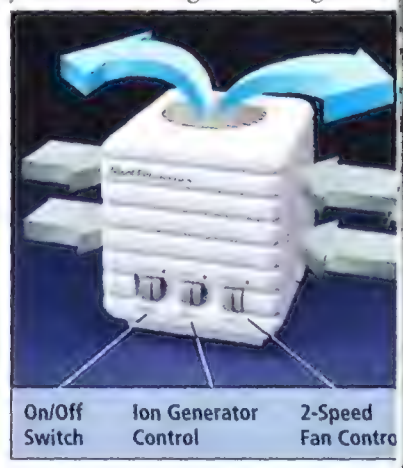
GET RELIEF FROM THE MISERY



Steam inhalation therapy has long been recommended by doctors for the relief of congestion from allergies, sinus infections, colds, bronchitis and throat irritation. Prepare yourself for the onslaught of the cold and flu season with the new *Steam Inhaler* from Kaz. Unlike old fashioned vaporizers, this steam inhaler won't injure delicate membranes adding to your discomfort. Its unique design creates a controlled, gentle stream of steam. And the scientifically designed soft hood allows air to mix with the steam allowing comfortable, natural breathing. The patented grille design lets you control the flow of steam precisely, making it safe for both adults and children. Compact and lightweight, it's easy to use at home, the office or when traveling. Fill it with only 1.5 oz. of tap water and get up to 30 minutes of steam therapy. Automatic dual-voltage capability for use in the U.S.A. or abroad. Comes with soft travel case. ***$49.95*** ($7.95) #4040.

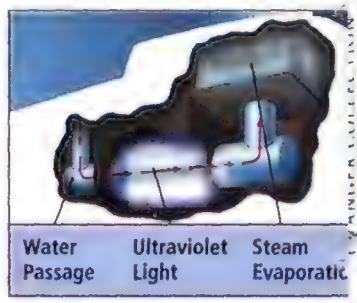
A ROOM FULL OF FRESH AIR FROM A PINT SIZED PURIFIER

At your desk, in your den, even in your bedroom, there's no reason not to breathe clean, fresh air. The *Puri-Clear 55 4-Stage Air Purifier* is a pint-sized wonder that measures just 6"L x 6"D x 6"H, fits anywhere, and will scrub the a clean and mountain fresh in a 12' x 10' room 3 times a hour. Pollen, smoke, animal dander, bacteria, odors and mold spores are all removed by Puri-Clear's sophisticated 4-stage purification system Here's how it works -- Stage 1, the pre-filter, removes large dust and dirt particles. Stage 2, the activated carbon filter, traps and removes irritating odors. Stage 3, a specially designed *3M Filtrete*™ filter, electrostatically attracts and removes small and microscopic sub-micro particulate pollutants. Stage 4, the separately controlled negative ion generator, revitalizes and freshens the air. And that's not all, the Puri-Clear 55 features a convenient, slide control fragrance dispenser so you can add your favorite scents to the room. A "squirrel cage" fan that is powerful yet whisper quiet and Puri-Clear's unique wrap-around filter that draws air into the filter stages from three sides, complete the package. Ruggedly constructed and UL listed, The Puri-Clear 55 is the first and only personal air purifier that's both full featured and value priced. ***$59.95*** ($8.95) #9300.



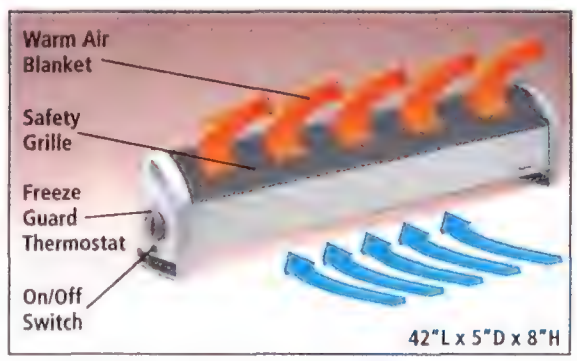
THE HEALTHIEST HUMIDIFIER YOU CAN BUY

During the winter, you're much more vulnerable to colc and flu viruses and illnesses caused by such common household bacteria as E. coli, Staphylococcus aureus and others. Fight back with th *GF150 Germ Free Humidifier* the first and only humidifier that delivers 99.99% germ fre warm mist vapor into the parched air inside your home. It is the *only* humidifier that uses both hospital proven ultraviolet light irradiation an steam evaporation to *complete sterilize the warm water mist.* No other humidifier can do that! And because the GF150 is a warm mist humidifier, there is no white dust to collect on your furniture. The GF150 features a refill indicator light, a manual reset button and a super-quiet fan t deliver germ-free warm vapor mist quickly into the room. Runs for 24 hours on a single 2 gallon tank of tap-water. Add your favorite over the counter medication and the GF150 converts to a vaporizer. UL listed and backed by a 3 year limited manufacturer's warranty. Prepare yourself and your family for the very dry days of winter with the healthiest humidifier you can buy. ***$119.95*** ($12.95) #9290.



A TOASTY WARM BLANKET OF AIR – INSTANTLY

Introducing *Kwik Comfort*, the fast source of safe, silent portable heat by Slant/Fin, the world's largest producer of baseboard heating systems. Kwik Comfort uses *natural convection* to evenly distribute heat throughout the room -- the same way the most sophisticated home baseboard heating systems do. Kwik Comfort draws in cool air and passes it over a revolutionary, aluminum speed-heating element that warms room air up to 20% faster than ordinary electric heating elements. *Natural convection* then distributes the toasty warm blanket of air evenly throughout the entire room. There's no rumbling, clattering, or whirring fan noise to disturb a good night's sleep. What's more, this silent heater is loaded with safeguards that ensure your safety. It has a finger proof grille, a full length high-temperature safety shut-off that prevents overheating and it has no accessible concentrated heat source or dangerous glowing hot coils. Other safety features include a low center of gravity to help prevent tip-over and a polarized plug. An automatic freeze-guard thermostat allows you to tailor heat output to your own comfort level and it will turn the heater on automatically if the room air temperature drops below 41°F. Its beautiful, streamlined design fits easily and unobtrusively in any room. Ruggedly constructed and UL listed, Kwik Comfort will meet your heating needs for years to come. ***$89.95*** ($11.95) #7500.

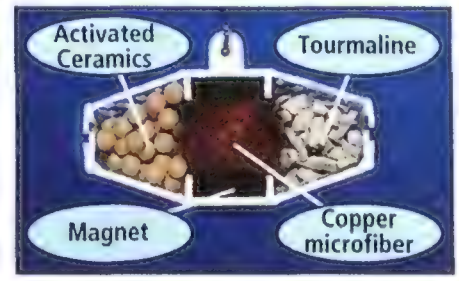


THE WATCH ISSUED TO U.S. TROOPS DURING DESERT STORM

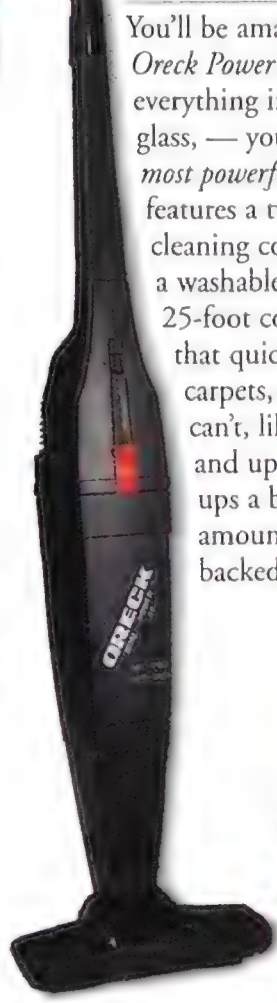
Issued to our troops during Operation Desert Storm, the *Night Vision* exceeds the military's strict MIL-W-46374F specifications and *it's the only watch available in the world that is completely self-luminous.* The secret is *Tritium (H^3)*, an exotic hydrogen isotope. Each hand and hour marker consists of a small vial of tritium coated with phosphorous. The result is the brightest luminescent source available. And it will shine brightly, unaided, for 12 years! Features include a Swiss quartz movement, scratch-resistant crystal, date calendar and sweep second hand all encased in lightweight nylon alloy. Water resistant to 660 ft. Available with a black leather band or stainless steel band (shown) with or without the American flag emblem. Each includes a nylon strap. Your choice ***$129.95*** ($9.95): Stainless steel band #6700; without flag emblem #6750. Leather band #6800; without flag emblem #6850.

TURBO CLEAN YOUR LAUNDRY WITHOUT HARSH DETERGENT OR BLEACH

Introducing *Turbo Plus*, the latest advance in anti-bacterial laundry cleaning technology from the company that introduced activated ceramic laundry discs to America. You'll be amazed by how much cleaner your clothes can be. Whiter, brighter clothes and better stain removal without using any detergents or harsh chemicals whatsoever. Turbo Plus combines tourmaline and copper microfiber with activated ionic ceramics to increase water's natural cleaning ability. The new float system keeps the disc submerged increasing the disc's efficiency. No matter what you've used in the past, you will see an improvement with Turbo Plus. Clean, fresh, unscented and chemical free with no fiber deterioration, color-fading, or skin irritants common with most laundry products. And laboratory tests prove Turbo Plus kills the toxic E. coli and Staphylococcus aureus bacteria. Works in both hot and cold water. Turbo Plus will clean your clothes for up to two years (that's 700 loads!) and costs just pennies a load to use. With the average family spending about $150 a year on detergents, bleaches and softeners, this is the one product you can't afford to be without! ***$49.95*** ($6.95) #7800.



NOW THE MOST POWERFUL YOU CAN BUY – THIS IS ONE AMAZING VACUUM



You'll be amazed with the performance of the *Oreck Power Broom*. It picks up anything and everything in its path. Dust, crumbs, broken glass, — you name it. *This electric broom is the most powerful you can buy!* The Power Broom features a two-speed motor for customized cleaning control, a large capacity dust cup with a washable, re-usable filter and an extra-long 25-foot cord. With a self-adjusting floor tool that quickly and easily glides from floors to carpets, it goes places most regular vacuums can't, like under beds, up and down stairs and up-against walls. It makes quick pick-ups a breeze. Hangs flat and out-of-the-way in a minimal amount of space. The Power Broom is so well-built, it's backed by a Mfr.'s 2-yr. ltd. warranty. ***$79.95*** ($9.95) #3950.

"The Magellan Ultimate Guarantee"™
If you're not completely satisfied with your purchase, simply return it for a full refund.

ORDER TOLL-FREE 24 HOURS A DAY

800-279-2018 Extension SMTHA841

TO ORDER BY MAIL:
Send check or money order for the total amount (including S & H) or credit card number and expiration date to:

The Magellan Group's
Tools For Living®
Dept. SMTHA841
P.O. BOX 452
Louisiana, MO 63353

A84 © 1997 The Magellan Group, Inc.

hands-on toys

BY PAUL TRACHTMAN

PHOTOGRAPHS BY TOM MORILLO

EVERY CULTURE SEEMS TO HAVE TOYS THAT REFLECT ITS WAY OF LIFE. MINIATURE CLAY knights on horseback entertained children in medieval Europe, and child's play during the French Revolution included little guillotines that beheaded aristocratic dolls. The Industrial Revolution spawned toy machines, trains and motorcars, and in this century the culture of television images and other mass media is reflected in the reign of the Barbie doll and superhero action figures.

But in many parts of the world another kind of toy has also become a symbol of late 20th-century life. It takes many shapes and forms, but its defining characteristic is how it is made, and what it is made from. It is the recycled toy, pieced together from things made for mass consumption and meant to be thrown away. With the imagination, ingenuity and skilled hands of the toymaker, a plastic bottle in Haiti is transformed into a toy helicopter, armed with ballpoint pens for rockets; or a tin can in India is cut and reshaped into a miniature locomotive, with bottle tops for wheels. A remarkable collection of such toys from every part of the world is currently on view at the Museum of International Folk Art in Santa Fe, New Mexico, as part of its exhibition "Recycled, Re-Seen: Folk Art from the Global Scrap Heap." This exhibition will run until January 4 and then will travel to four other museums in the United States over the next two years.

A rubber-band-powered helicopter was made a dozen years ago in Monrovia, Liberia, by itinerant toymaker Saarenald T.S. Yaawaisan. Everything from the blade tips to the octagonal fittings on the wheels was carved from cast-off flip-flops.

A visitor to this show is quickly struck by the fact that, despite all the differences of culture and language, children everywhere like to play with similar toys. The language of fun has a universal vocabulary of kites and hoops, head-bobbing pull toys and spinning noisemakers, hand-size cars and trucks, weapons and airplanes, dolls and miniature sets of kitchen utensils and furniture. Even more striking is the universality of commercial brand names and logos that turn up in the scraps of metal and plastic recycled in these toys, as if Coca-Cola and Nestlé and Mobil and Gillette have become icons that know no boundaries of culture or geography.

Writing in the richly illustrated exhibition catalog, folklorist and co-organizer Suzanne Seriff observes that these recycled toys are the artifacts of an increasingly global village: "The process of retrieving and transforming a consumer package or product that someone else has thrown away is a phenomenon that is taking place in the largest metropolises of urban America as well as the remotest corners of the Amazonian rain forest."

Seriff collaborated with the museum's director, Charlene Cerny, in developing this show. The museum began the process, which took five years, by bringing together academics from all over the world. Then, it sent seven curators and their associates to Ecuador, Senegal, Mexico and other countries to comb through markets and workshops. In all, nearly 50 countries are represented in the show. "When we began," Cerny recalls, "there were practically no books to rely on. All we had to start with were two SMITHSONIAN magazine articles on recycling" (January 1980 and August 1983). But the show that resulted reveals a whole world of artisans who are busy transforming trash into everything from briefcases to toys, and redefining our view of folk art along the way.

Walking through the show with Seriff, I can see that it is the toys that are closest to her heart. We stop to look at a simple little airplane made by a Senegalese boy from a plastic bleach bottle with a worn-out sandal sole stuck through the handle to make the wings, and with wheels cut from the same material. "I think this is my favorite," Seriff says. "It uses so little, and it says so much."

We go on to look at more intricately designed and engineered toys, miniature cars, motorcycles and fancy touring bicycles. Constructed out of wire coat hangers and telephone wire, bits of metal cans and bicycle chains, they are remarkably similar in ingenuity and elegance. In another display, a toy Deux Chevaux car, made out of scrap metal from cans of Nestlé Lait Concentré (condensed milk), with a peeled-back sunroof, seems to have all the flimsy charm of the classic Citroën. The toy, however, was not made in France but in Madagascar.

Seeing these toys in a folk art museum, formally displayed and labeled, so far from the scrap heap that spawned them, seems a little ironic—we usually see folk art as something pure; authentic, if not primitive. But that is part of the fun of this show, as in the case of a toy truck whose label documents what it is made of: "Gillette Right Guard deodorant, Famosa tomato paste cans, Famosa pear juice cans, plastic shoe soles." The irony is even more striking in the case

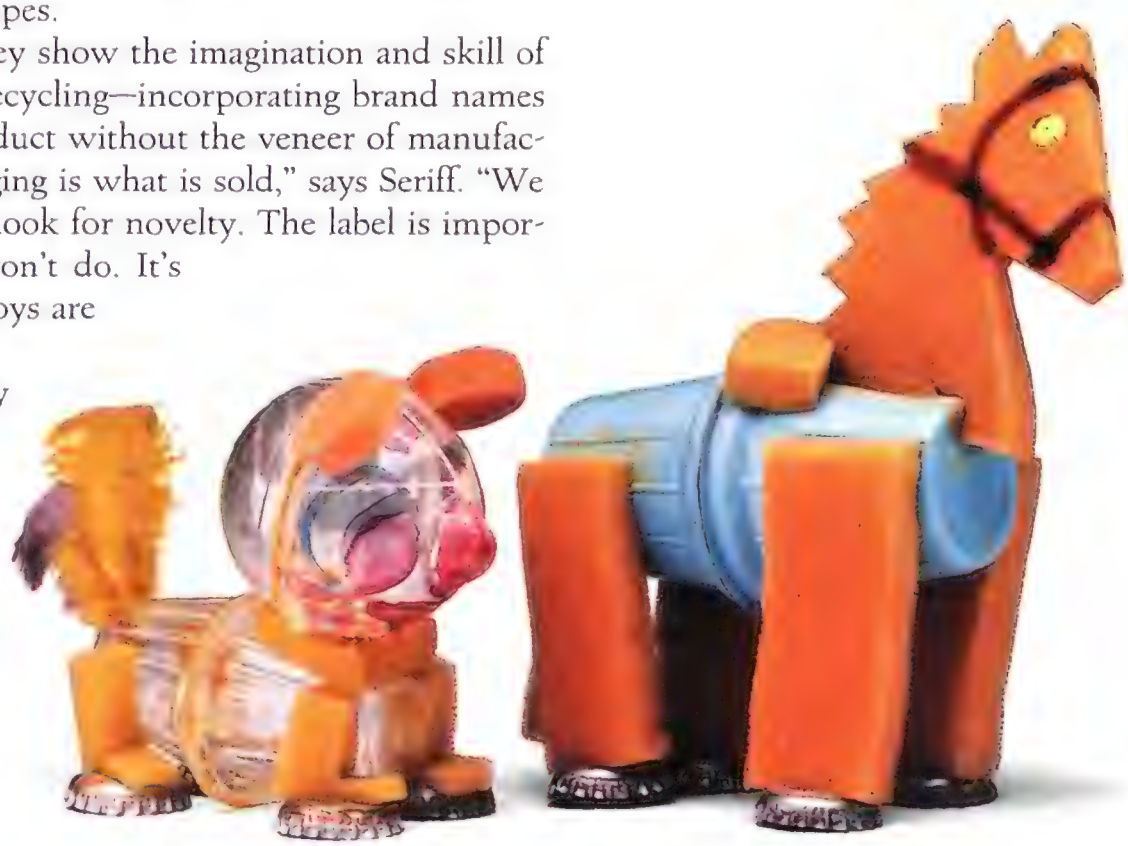
From the global scrap heap into the hands of children: (clockwise from upper left) a jet plane of recycled cans and sheet metal, made by Assane Faye of Senegal; a car from Madagascar, made of misprinted sheet metal; miniature furniture fashioned from flattened bottle caps in Mexico; an airplane magically conjured out of an empty bleach bottle and old flip-flops by a boy in Senegal; a motorcycle from Burkina Faso, with bike chain for wheels and a copper-wire frame; and (center) a boat made of sheet metal, also by Faye.

of toys such as the little cars and horses from South Africa and Senegal, made from recycled bug bombs and pesticide cans, with bright logos and poison warnings incorporated into the toys' design. Seriff says that many scholars in her field are challenging the classic view of folk art as nonindustrial, premodern and rural. "These toys are a great example of folk art that is a grafting of different technologies, sensibilities and values," she says. "The old view sees folk art as disappearing under the impact of modern globalized culture, but this kind of recycling is by definition an impure, hybrid art form and you can see how it's thriving."

There are other ironies hidden in these toys, Seriff points out. "Many of these fancy toy bikes and cars and motorcycles are inspired by products of a consumer society that is way beyond reach for the children who play with them, or make them," she says. "On the other hand, some of these war toys, the tanks and rockets and helicopters, are images that are all too real in their daily lives." Indeed, one display in the show highlights a collection of shiny war toys, including Chinook and Black Hawk helicopters and a Humvee rough-terrain vehicle, made by a group of teenage boys only a few weeks after the U.S. intervention in Haiti in 1994. They used plastic bottles, cans, scrap metal, ballpoint pens, film canisters and tiny plastic toy soldiers.

Some of the toys in the show have a more traditional, domestic character, although they're made from recycled materials. For example, tiny kitchen utensils, plates, pots, braziers, buckets and dustpans, made from snippets of discarded cans and plastic, are popular items with little girls in Mexico. These toys, which fit in the palm of a child's hand and sell for a few cents apiece, are commonly made and sold in a corner of the same markets where women buy real kitchenware and appliances. Miniature sets of tables and chairs are made from discarded bottle caps that are flattened, folded and fitted together into new shapes.

The appeal of all these toys is that they show the imagination and skill of the toymakers. This is the esthetic of recycling—incorporating brand names and raw materials into the finished product without the veneer of manufactured toys. "In the United States, packaging is what is sold," says Seriff. "We expect toys to be boxed, and new. We look for novelty. The label is important. It's got to be Nike; a knockoff won't do. It's the esthetic of scarcity. These recycled toys are the opposite in every respect."



But even that aspect of this folk art may be changing, too. "In India," says Seriff, "one of our curators found factories where people make toys by hand from recycled tin cans and other scrap. Then the toys are packaged in commercial boxes with labels and sold as if the toys are manufactured!" This could be the ultimate irony in the evolution of recycling as a global folk art.

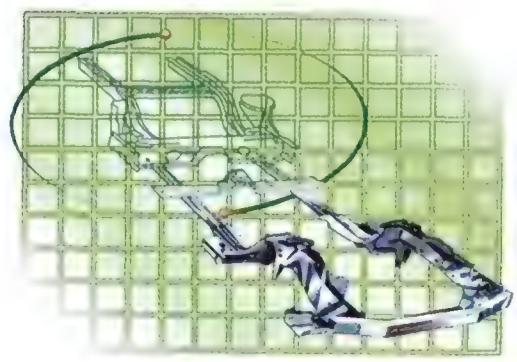
More toys that can't be bought off the shelf: (clockwise from upper left) a train, by Vinod Kumar Sharma of New Delhi, India, with wheels made of bottle caps and shoe-polish cans; a Chinook helicopter made by teenage boys in Haiti after the U.S. intervention; a petroleum truck from Liberia; a radio created by a Hausa boy in Kano, Nigeria, in 1978 that may actually have worked; from Mexico, a horse and dog; and (center) a horse-drawn cart, by V. K. Sharma, cut from misprinted sheet metal for tuna cans.

There are over 2 million miles of paved road in the United States.

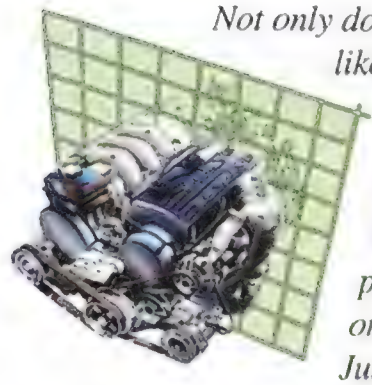
So many roads. So little time. That's the feeling you get behind the wheel of the Dodge Stratus ES–an intelligently designed sedan that was specifically engineered to make driving more of what it should be–fun.

An available AutoStick® transmission combines the convenience of an automatic with the control of a stick. Just place the gear selector into Drive for automatic shifting, or drop it into the AutoStick mode and enjoy the exhilaration of clutchless manual shifting.

By incorporating steel rails and crossmembers, we developed an extremely rigid unibody that minimizes flexing and twisting to provide a solid foundation



for Stratus' modified double-wishbone suspension. The result is a smooth ride with firm, responsive handling. Your daily commute may never be the same.



Not only does Stratus look like it can perform, it backs it up with an available 2.5L, 24-valve V-6 that delivers plenty of power on demand. Just say when.

This race-modified Stratus was developed largely in-house and was the first American-built car to compete in the North American Touring Car Championship. Obviously, our designers and engineers know a thing or two about performance. We think you'll agree. To find out more about Stratus, call 1-800-4-A-DODGE or visit our Web site at www.4adodge.com

Lucky you.

Stratus The New Dodge

Always use seat belts. Remember a backseat is the safest place for children.

LOOK at ME

BY JOSEPH F. WILKINSON

AS FAR AS BERNARR MACFADDEN WAS CONCERNED, THE MAIN AIM IN LIFE WAS TO BE NOTICED

ON A GRAY AUGUST AFTERNOON in 1952, a small plane hovered over the river Seine at the western side of Paris. The plane's door opened and out stepped a man wearing red flannel long johns, a bright yellow lifejacket and shoes with three-inch foam soles. He pulled the rip cord of his parachute and waved to the crowd below as he drifted down to his landing spot. That was Bernarr Macfadden celebrating his 84th birthday. In case you don't recognize the name, Macfadden was a physical-fitness guru and publishing genius of the early part of this century, but his main aim in life was to be noticed.

He resembled the heroes of the rags-to-riches novels that were popular at the turn of the century. When he came to New York in 1893, he was a farm boy from the Ozarks equipped with superb musculature, three years of education and monumental self-confidence. By 1935, he had become the head of a giant magazine empire and owner of sanitariums, hotels, health food restaurants and private planes. He was written up in *Time* and *Newsweek*, pictured in newsreels and denounced in pulpits. At the sight of a press camera he would strip to his underwear to show off his physique. He ate more carrots in public than Bugs Bunny. He called the medical profession an organized fraud. At a time when sex was rarely mentioned publicly, he wrote and lectured that it was natural, healthy and enjoyable. He said people who followed his rules could live to 120. He predicted he would make 150. Some people thought he was a prophet and others a buffoon, but everyone then knew of Bernarr Macfadden.

Still nimble at 78, fitness champion Bernarr Macfadden shows off his good health with schoolchildren in New York.

He believed that any publicity was better than being ignored. He walked the streets of Manhattan barefoot to draw magnetic power from the earth. He gave press interviews while standing on his head. He even founded a religion called Cosmotarianism. What he wanted more than anything else was to become President of the United States, and according to the folklore of the day, his humble origins qualified him as Presidential material.

He was born Bernard Adolphus McFadden on a run-down farm near Mill Spring, Missouri. His father was an alcoholic who died in a fit of delirium tremens. His mother was a consumptive. Unable to care for her sickly son, she sent him to relatives who ran a small, unprofitable hotel in Mount Sterling, Illinois, about 100 miles north of St. Louis. On his arrival, the wife of the proprietor looked Bernard over and said: "He ain't so much to look at, but there's likely work in him." Her husband agreed, vowing: "If there's work in him, we'll get it out."

Bernard did hotel chores around the clock, growing even scrawnier on long hours and little food. After about a year had gone by, the proprietor said to him: "Boy, I've got news for you. Your mother's dead." To this the wife added: "And if you ask me, this one's going the same way soon. Consumption runs in the family."

Seeking to avoid the cost of a funeral, the couple sold Bernard as a bound boy, a sort of apprentice, to a nearby farmer. Farm life was the making of him. He worked hard and ate heartily. The food was better than he'd known earlier and included whole wheat bread. Within two years, he had gained weight and muscle.

He slipped away one night, sneaking rides on trains to St. Louis, where he subsisted on a series of odd jobs, but his health declined. Doctors and patent medicines gave him no relief.

What he wanted more than anything else was to become President of the United States.

As he later wrote in one of the early issues of his first magazine, *Physical Culture*: "At the age of 16 I was a complete physical wreck. I had the hacking cough of a consumptive, my muscular system had so wasted that I resembled a skeleton; my digestive organs were in a deplorable condition."

He cured himself and developed large muscles through a vegetarian diet and strenuous daily workouts. This was probably the beginning of his lifelong disdain for the medical community and his feeling of omniscience. He decided what worked for him would work for others, and at the age of 18 he set up in business in St. Louis as a "kinistherapist," a teacher of what he called "higher physical culture."

Eventually he decided that New York was the place to make his fortune. With a stake of $50, he rented a two-room apartment at 24 East 20th Street and established himself as an exercise professor.

This big move involved another. He changed the spelling and accentuation of his first name, thinking it would sound stronger, like a lion's roar. He thought Macfadden, without the big *F* in the middle, was more muscular. The middle name, Adolphus, was easily discarded.

Many big publishing companies have their origins in small job presses. Macfadden's began with an exercise machine. In between workout sessions, he invented and patented a muscle developer, a combination of rope, rubber and pulleys. In the promotional pamphlets he wrote for his exerciser, he described how to use the apparatus and included advice on physical fitness and health. Many readers thought the pamphlets were periodicals and asked to subscribe.

Macfadden rented desk space in a real-estate office and established the Physical Culture Publishing Company. The first issue of *Physical Culture* came out in March 1899 and sold for five cents. The fledgling publisher wrote the entire magazine under a variety of pen names. He advised readers how to develop themselves physically, how to maintain their health and how to cope with illness. He illustrated it with photographs of himself lightly clad, and muscles bulging. His first editorial was entitled: "Weakness Is a Crime." The covers of later issues carried two

Text continues on p. 143

HOW FAR WILL YOU GO TO GET IT BACK?

So smooth and easy flowing, naturally people flip for it.

uni-ball®

SANFORD.

The world's most loved roller ball pen™

www.sanfordcorp.com

©2001 Sanford. All rights reserved.

At your age, with your high cholesterol, what's your risk of a first heart attack?

If you have high cholesterol, figure your risk of a first heart attack.

Fill in your points for each risk factor.

☐ **Age: Men**

0 pts. Less than 35 | 2 pts. 40 to 48 | 4 pts. 54+
1 pt. 35 to 39 | 3 pts. 49 to 53

☐ **Age: Women**

0 pts. Less than 42 | 2 pts. 45 to 54 | 4 pts. 74+
1 pt. 42 to 44 | 3 pts. 55 to 73

☐ **Family History:**

2 pts. My family has a history of heart disease or heart attacks before the age of 60

☐ **Inactive Lifestyle:**

1 pt. I rarely exercise or do anything physically demanding

☐ **Weight:**

1 pt. I'm more than 20 lbs. over my ideal weight

☐ **Smoking:**

1 pt. I'm a smoker

☐ **Diabetic:**

1 pt. Male Diabetic
2 pts. Female Diabetic

☐ **Total Cholesterol Level:**

0 pts. Less than 240 mg/dL
1 pt. 240 to 315 mg/dL
2 pts. More than 315 mg/dL

☐ **HDL Level (good cholesterol):**

0 pts. 39 to 59 mg/dL
1 pt. 30 to 38 mg/dL
2 pts. Under 30 mg/dL
-1 pt. Over 60 mg/dL

☐ **Blood Pressure:**

I don't take blood pressure medication; my blood pressure is:
(*Use your top or higher blood pressure number*)

0 pts. Less than 140 mmHg
1 pt. 140 to 170 mmHg
2 pts. Greater than 170 mmHg
(or)
1 pt. I am currently taking blood pressure medication

☐ **Total Points**

If you scored 4 points or more, you could be at above average risk of a first heart attack compared to the general adult population. The more points you score, the greater your risk.

If you have already had a heart attack or have heart disease, your heart attack risk is significantly higher. **Only your doctor can evaluate your risk and recommend treatment plans to reduce your risk.** If you don't know your cholesterol level or blood pressure, ask your doctor if your levels should be checked.

Provided as an educational service from Bristol-Myers Squibb Company.

American Heart Association℠
Fighting Heart Disease and Stroke

©1999 Bristol-Myers Squibb Company, Princeton, NJ

PRAVACHOL, in combination with diet, is proven to reduce the risk of a first heart attack, reduce the risk of death from heart disease, and reduce the need for surgery to clear blocked coronary arteries (such as bypass or angioplasty) based on a landmark study including over 6,500 males with high cholesterol and no evidence of heart disease. Because PRAVACHOL is a prescription drug, you should ask your doctor or healthcare professional if PRAVACHOL is right for you. Some mild side effects, such as slight rash or stomach upset, occur in about 2–4% of patients.

PRAVACHOL®

Proven to help prevent first heart attacks in people with high cholesterol.

PRAVACHOL is the only cholesterol-lowering drug of its kind proven to help prevent first heart attacks. And the grim fact is, up to 33% of people do not survive their first heart attack. Improving your diet and exercise is an important first step, but may not be enough. So ask your doctor about PRAVACHOL. It reduces the risk of a first heart attack and the need for surgery to clear blocked coronary arteries. PRAVACHOL has been prescribed by doctors for millions of men and women worldwide. It could help you live a longer, healthier life.

Ask your doctor if PRAVACHOL is right for you. Or call **1-800-PREVENT** for information on *first heart attack prevention* including a free brochure from the American Heart Association. It's all provided by Bristol-Myers Squibb.

PRAVACHOL® pravastatin sodium 20 mg tablets

Proven to help prevent first heart attacks.

Visit our Web site at www.pravachol.com

PRAVACHOL should not be taken by women who are pregnant or nursing, people who are allergic to any of its ingredients or by anyone with liver disease. Your doctor may perform simple blood tests to check your liver function before and during treatment with PRAVACHOL. Muscle pain or weakness could be a sign of a rare but serious side effect and should be reported to your doctor right away. Be sure your doctor knows about other medications you may be taking in order to avoid any possible serious drug interactions. Please see important information on the next page.

PRAVACHOL®

Pravastatin Sodium Tablets

CONTRAINDICATIONS: Hypersensitivity to any component of this medication. Active liver disease or unexplained, persistent elevations in liver function tests (see **WARNINGS**). *Pregnancy and lactation.* Atherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **Pravastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards.** If the patient becomes pregnant while taking this class of drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS: Liver Enzymes: HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Increases of serum transaminase (ALT, AST) values to more than 3 times the upper limit of normal occurring on 2 or more (not necessarily sequential) occasions have been reported in 1.3% of patients treated with pravastatin in the US over an average period of 18 months. These abnormalities were not associated with cholestasis and did not appear to be related to treatment duration. In those patients in whom these abnormalities were believed to be related to pravastatin and who were discontinued from therapy, the transaminase levels usually fell slowly to pretreatment levels. These biochemical findings are usually asymptomatic although worldwide experience indicates that anorexia, weakness, and/or abdominal pain may also be present in rare patients. In the largest long-term placebo-controlled clinical trial with pravastatin (Pravastatin Primary Prevention Study; See **Clinical Pharmacology**), the overall incidence of AST and/or ALT elevations to greater than three times the upper limit of normal was 1.05% in the pravastatin group as compared to 0.75% in the placebo group. One (0.03%) pravastatin-treated patient and 2 (0.06%) placebo-treated patients were discontinued because of transaminase elevations. Of the patients with normal liver function at week 12, three of 2875 treated with pravastatin (0.10%) and one of the 2919 placebo patients (0.03%) had elevations of AST greater than three times the upper limit of normal on two consecutive measurements and/or discontinued due to elevations in transaminase levels during the 4.8 years (median treatment) of the study. **It is recommended that liver function tests be performed prior to and at 12 weeks following initiation of therapy or the elevation of dose.** Patients who develop increased transaminase levels or signs and symptoms of liver disease should be monitored with a second liver function evaluation to confirm the finding and be followed thereafter with frequent liver function tests until the abnormality(ies) return to normal. Should an increase in AST or ALT of three times the upper limit of normal or greater persist, withdrawal of pravastatin therapy is recommended. Active liver disease or unexplained transaminase elevations are contraindications to the use of pravastatin (see **CONTRAINDICATIONS**). Caution should be exercised when pravastatin is administered to patients with a history of liver disease or heavy alcohol ingestion (see **CLINICAL PHARMACOLOGY: Pharmacokinetics/Metabolism**). Such patients should be closely monitored, started at the lower end of the recommended dosing range, and titrated to the desired therapeutic effect. **Skeletal Muscle: Rare cases of rhabdomyolysis with acute renal failure secondary to myoglobinuria have been reported with pravastatin and other drugs in this class.** Uncomplicated myalgia has also been reported in pravastatin-treated patients (see **ADVERSE REACTIONS**). Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values to greater than 10 times the upper normal limit, was rare (< 0.1%) in pravastatin clinical trials. Myopathy should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Pravastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. Pravastatin therapy should also be temporarily withheld in any patient experiencing an acute or serious condition predisposing to the development of renal failure secondary to rhabdomyolysis, e.g., sepsis; hypotension; major surgery; trauma; severe metabolic, endocrine, or electrolyte disorders; or uncontrolled epilepsy.** The risk of myopathy during treatment with another HMG-CoA reductase inhibitor is increased with concurrent therapy with either erythromycin, cyclosporine, niacin, or fibrates. However, neither myopathy nor significant increases in CPK levels have been observed in three reports involving a total of 100 post-transplant patients (24 renal and 76 cardiac) treated for up to two years concurrently with pravastatin 10-40 mg and cyclosporine. Some of these patients also received other concomitant immunosuppressive therapies. In one single-dose study, pravastatin levels were found to be increased in cardiac transplant patients receiving cyclosporine. Further, in clinical trials involving small numbers of patients who were treated concurrently with pravastatin and niacin, there were no reports of myopathy. Also, myopathy was not reported in a trial of combination pravastatin (40 mg/day) and gemfibrozil (1200 mg/day), although 4 of 75 patients on the combination showed marked CPK elevations versus one of 73 patients receiving placebo. There was a trend toward more frequent CPK elevations and patient withdrawals due to musculoskeletal symptoms in the group receiving combined treatment as compared with the groups receiving placebo, gemfibrozil, or pravastatin monotherapy (see **PRECAUTIONS: Drug Interactions**). **The use of fibrates alone may occasionally be associated with myopathy. The combined use of pravastatin and fibrates should be avoided unless the benefit of further alterations in lipid levels is likely to outweigh the increased risk of this drug combination.**

PRECAUTIONS: General: Pravastatin may elevate creatinine phosphokinase and transaminase levels (see **ADVERSE REACTIONS**). This should be considered in the differential diagnosis of chest pain in a patient on therapy with pravastatin. *Homozygous Familial Hypercholesterolemia.* Pravastatin has not been evaluated in patients with rare homozygous familial hypercholesterolemia. In this group of patients, it has been reported that HMG-CoA reductase inhibitors are less effective because the patients lack functional LDL receptors. *Renal Insufficiency.* A single 20 mg oral dose of pravastatin was administered to 24 patients with varying degrees of renal impairment (as determined by creatinine clearance). No effect was observed on the pharmacokinetics of pravastatin or its 3α-hydroxy isomeric metabolite (SQ 31,906). A small increase was seen in mean AUC values and half-life ($t_{1/2}$) for the inactive enzymatic ring hydroxylation metabolite (SQ 31,945). Given this small sample size, the dosage administered, and the degree of individual variability, patients with renal impairment who are receiving pravastatin should be closely monitored. **Information for Patients:** Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. **Drug Interactions:** *Immunosuppressive Drugs, Gemfibrozil, Niacin (Nicotinic Acid), Erythromycin:* See **WARNINGS: Skeletal Muscle**. *Antipyrine:* Since concomitant administration of pravastatin had no effect on the clearance of antipyrine, interactions with other drugs metabolized via the same hepatic cytochrome isozymes are not expected. *Cholestyramine/Colestipol:* Concomitant administration resulted in an approximately 40 to 50% decrease in the mean AUC of pravastatin. However, when pravastatin was administered 1 hour before or 4 hours after cholestyramine or 1 hour before colestipol and a standard meal, there was no clinically significant decrease in bioavailability or therapeutic effect. (See **DOSAGE AND ADMINISTRATION: Concomitant Therapy**.) *Warfarin:* In a study involving 10 healthy male subjects given pravastatin and warfarin concomitantly for 6 days, bioavailability parameters at steady state for pravastatin (parent compound) were not altered. Pravastatin did not alter the plasma protein-binding of warfarin. Concomitant dosing did increase the AUC and Cmax of warfarin but did not produce any changes in its anticoagulant action (i.e., no increase was seen in mean prothrombin time after 6 days of concomitant therapy). However, bleeding and extreme prolongation of prothrombin time has been reported with another drug in this class. Patients receiving warfarin-type anticoagulants should have their prothrombin times closely monitored when pravastatin is initiated or the dosage of pravastatin is changed. *Cimetidine:* The $AUC_{0-12\,hr}$ for pravastatin when given with cimetidine was not significantly different from the AUC for pravastatin when given alone. A significant difference was observed between the AUC's for pravastatin when given with cimetidine compared to when administered with antacid. *Digoxin:* In a crossover trial involving 18 healthy male subjects given pravastatin and digoxin concurrently for 9 days, the bioavailability parameters of digoxin were not affected. The AUC of pravastatin tended to increase, but the overall bioavailability of pravastatin plus its metabolites SQ 31,906 and SQ 31,945 was not altered. *Cyclosporine:* Some investigators have measured cyclosporine levels in patients on pravastatin, and to date, these results indicate no clinically meaningful elevations in cyclosporine levels. In one single-dose study, pravastatin levels were found to be increased in cardiac transplant patients receiving cyclosporine. *Gemfibrozil:* In a crossover study in 20 healthy male volunteers given concomitant single doses of pravastatin and gemfibrozil, there was a significant decrease in urinary excretion and protein binding of pravastatin. In addition, there was a significant increase in AUC, Cmax, and Tmax for the pravastatin metabolite SQ 31,906. Combination therapy with pravastatin and gemfibrozil is generally not recommended. In interaction studies with *aspirin, antacids* (1 hour prior to PRAVACHOL), *cimetidine, nicotinic acid,* or *probucol,* no statistically significant differences in bioavailability were seen when PRAVACHOL (pravastatin sodium) was administered. *Other Drugs:* During clinical trials, no noticeable drug interactions were reported when PRAVACHOL was added to: diuretics, antihypertensives, digitalis, ACE inhibitors, calcium channel blockers, beta-blockers, or nitroglycerin. **Endocrine Function:** HMG-CoA reductase inhibitors interfere with cholesterol synthesis and lower circulating cholesterol levels and, as such, might theoretically blunt adrenal or gonadal steroid hormone production. Results of clinical trials with pravastatin in males and post-menopausal females were inconsistent with regard to possible effects of the drug on basal steroid hormone levels. In a study of 21 males, the mean testosterone response to human chorionic gonadotropin was significantly reduced ($p < 0.004$) after 16 weeks of treatment with 40 mg of pravastatin. However, the percentage of patients showing a ≥ 50% rise in plasma testosterone after human chorionic gonadotropin stimulation did not change significantly after therapy in these patients. The effects of HMG-CoA reductase inhibitors on spermatogenesis and fertility have not been studied in adequate numbers of patients. The effects, if any, of pravastatin on the pituitary-gonadal axis in pre-menopausal females are unknown. Patients treated with pravastatin who display clinical evidence of endocrine dysfunction should be evaluated appropriately. Caution should also be exercised if an HMG-CoA reductase inhibitor or other agent used to lower cholesterol levels is administered to patients also receiving other drugs (e.g., ketoconazole, spironolactone, cimetidine) that may diminish the levels or activity of steroid hormones. **CNS Toxicity:** CNS vascular lesions, characterized by perivascular hemorrhage and edema and mononuclear cell infiltration of perivascular spaces, were seen in dogs treated with pravastatin at a dose of 25 mg/kg/day, a dose that produced a plasma drug level about 50 times higher than the mean drug level in humans taking 40 mg/day. Similar CNS vascular lesions have been observed with several other drugs in this class. A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinogeniculate fibers) in clinically normal dogs in a dose-dependent fashion starting at 60 mg/kg/day, a dose that produced mean plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose (as measured by total enzyme inhibitory activity). This same drug also produced vestibulocochlear Wallerian-like degeneration and retinal ganglion cell chromatolysis in dogs treated for 14 weeks at 180 mg/kg/day, a dose which resulted in a mean plasma drug level similar to that seen with the 60 mg/kg/day dose. **Carcinogenesis, Mutagenesis, Impairment of Fertility:** In a 2-year study in rats fed pravastatin at doses of 10, 30, or 100 mg/kg body weight, there was an increased incidence of hepatocellular carcinomas in males at the highest dose ($p < 0.01$). Although rats were given up to 125 times the human dose (HD) on a mg/kg body weight basis, serum drug levels were only 6 to 10 times higher than those measured in humans given 40 mg pravastatin as measured by AUC. The oral administration of 10, 30, or 100 mg/kg (producing plasma drug levels approximately 0.5 to 5.0 times the human drug levels at 40 mg) of pravastatin to mice for 22 months resulted in a statistically significant increase in the incidence of malignant lymphomas in treated females when all treatment groups were pooled and compared to controls ($p < 0.05$). The incidence was not dose-related and male mice were not affected. A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose. Liver carcinomas were significantly increased in high-dose females and mid- and high-dose males, with a maximum incidence of 90 percent in males. The incidence of adenomas of the liver was significantly increased in mid- and high-dose females. Drug treatment also significantly increased the incidence of lung adenomas in mid- and high-dose males and females. Adenomas of the eye Hardenan gland (a gland of the eye of rodents) were significantly higher in high-dose mice than in controls. No evidence of mutagenicity was observed *in vitro*, with or without rat-liver metabolic activation, in the following studies: microbial mutagen tests, using mutant strains of *Salmonella typhimurium* or *Escherichia coli*; a forward mutation assay in L5178Y TK +/- mouse lymphoma cells; a chromosomal aberration test in hamster cells; and a gene conversion assay using *Saccharomyces cerevisiae*. In addition, there was no evidence of mutagenicity in either a dominant lethal test in mice or a micronucleus test in mice. In a study in rats, with daily doses up to 500 mg/kg, pravastatin did not produce any adverse effects on fertility or general reproductive performance. However, in a study with another HMG-CoA reductase inhibitor, there was decreased fertility in male rats treated for 34 weeks at 25 mg/kg body weight, although this effect was not observed in a subsequent fertility study when this same dose was administered for 11 weeks (the entire cycle of spermatogenesis, including epididymal maturation). In rats treated with this same reductase inhibitor at 180 mg/kg/day, seminiferous tubule degeneration (necrosis and loss of spermatogenic epithelium) was observed. Although not seen with pravastatin, two similar drugs in this class caused drug-related testicular atrophy, decreased spermatogenesis, spermatocytic degeneration, and giant cell formation in dogs. The clinical significance of these findings is unclear. **Pregnancy: Pregnancy Category X.** See **CONTRAINDICATIONS**. Safety in pregnant women has not been established. Pravastatin was not teratogenic in rats at doses up to 1000 mg/kg daily or in rabbits at doses of up to 50 mg/kg daily. These doses resulted in 20x (rabbit) or 240x (rat) the human exposure based on surface area (mg/meter^2). However, in studies with another HMG-CoA reductase inhibitor, skeletal malformations were observed in rats and mice. There has been one report of severe congenital bony deformity, tracheo-esophageal fistula, and anal atresia (Vater association) in a baby born to a woman who took another HMG-CoA reductase inhibitor with dextroamphetamine sulfate during the first trimester of pregnancy. PRAVACHOL (pravastatin sodium) should be administered to women of child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking PRAVACHOL (pravastatin sodium), it should be discontinued and the patient advised again as to the potential hazards to the fetus. **Nursing Mothers:** A small amount of pravastatin is excreted in human breast milk. Because of the potential for serious adverse reactions in nursing infants, women taking PRAVACHOL should not nurse (see **CONTRAINDICATIONS**). **Pediatric Use:** Safety and effectiveness in individuals less than 18 years old have not been established. Hence, treatment in patients less than 18 years old is not recommended at this time.

ADVERSE REACTIONS: Pravastatin is generally well tolerated; adverse reactions have usually been mild and transient. In 4-month long placebo-controlled trials, 1.7% of pravastatin-treated patients and 1.2% of placebo-treated patients were discontinued from treatment because of adverse experiences attributed to study drug therapy; this difference was not statistically significant. In long-term studies, the most common reasons for discontinuation were asymptomatic serum transaminase increases and mild, non-specific gastrointestinal complaints. During clinical trials the overall incidence of adverse events in the elderly was not different from the incidence observed in younger patients. **Adverse Clinical Events:** All adverse clinical events (regardless of attribution) reported in more than 2% of pravastatin-treated patients in the placebo-controlled trials are identified in the table below; also shown are the percentages of patients in whom these medical events were believed to be related or possibly related to the drug:

	All Events		Events Attributed to Study Drug	
Body System/Event	**Pravastatin (N = 900) %**	**Placebo (N = 411) %**	**Pravastatin (N = 900) %**	**Placebo (N = 411) %**
Cardiovascular				
Cardiac Chest Pain	4.0	3.4	0.1	0.0
Dermatologic Rash	4.0*	1.1	1.3	0.9
Gastrointestinal				
Nausea/Vomiting	7.3	7.1	2.9	3.4
Diarrhea	6.2	5.6	2.0	1.9
Abdominal Pain	5.4	6.9	2.0	3.9
Constipation	4.0	7.1	2.4	5.1
Flatulence	3.3	3.6	2.7	3.4
Heartburn	2.9	1.9	2.0	0.7
General				
Fatigue	3.8	3.4	1.9	1.0
Chest Pain	3.7	1.9	0.3	0.2
Influenza	2.4*	0.7	0.0	0.0
Musculoskeletal				
Localized Pain	10.0	9.0	1.4	1.5
Myalgia	2.7	1.0	0.6	0.0
Nervous System				
Headache	6.2	3.9	1.7*	0.2
Dizziness	3.3	3.2	1.0	0.5
Renal/Genitourinary				
Urinary Abnormality	2.4	2.9	0.7	1.2
Respiratory				
Common Cold	7.0	6.3	0.0	0.0
Rhinitis	4.0	4.1	0.1	0.0
Cough	2.6	1.7	0.1	0.0

*Statistically significantly different from placebo.

In the Pravastatin Primary Prevention Study (West of Scotland Coronary Prevention Study) (see **CLINICAL PHARMACOLOGY: Clinical Studies**) involving 6595 patients treated with PRAVACHOL (pravastatin sodium) (N = 3302) or placebo (n = 3293) the adverse event profile in the pravastatin group was comparable to that of the placebo group over the median 4.8 years of the study. The following effects have been reported with drugs in this class; not all the effects listed below have necessarily been associated with pravastatin therapy: *Skeletal:* myopathy, rhabdomyolysis, arthralgia. *Neurological:* dysfunction of certain cranial nerves (including alteration of taste, impairment of extra-ocular movement, facial paresis), tremor, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy, anxiety, insomnia, depression. *Hypersensitivity Reactions:* An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, dermatomyositis, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, eosinophilia, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome. *Gastrointestinal:* pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver, and, rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting. *Skin:* alopecia, pruritus. A variety of skin changes (e.g., nodules, discoloration, dryness of skin/mucous membranes, changes to hair/nails) have been reported. *Reproductive:* gynecomastia, loss of libido, erectile dysfunction. *Eye:* progression of cataracts (lens opacities), ophthalmoplegia. *Laboratory Abnormalities:* elevated transaminases, alkaline phosphatase, and bilirubin; thyroid function abnormalities. **Laboratory Test Abnormalities:** Increases in serum transaminase (ALT, AST) values and CPK have been observed (see **WARNINGS**). Transient, asymptomatic eosinophilia has been reported. Eosinophil counts usually returned to normal despite continued therapy. Anemia, thrombocytopenia, and leukopenia have been reported with HMG-CoA reductase inhibitors. **Concomitant Therapy:** Pravastatin has been administered concurrently with cholestyramine, colestipol, nicotinic acid, probucol and gemfibrozil. Preliminary data suggest that the addition of either probucol or gemfibrozil to therapy with lovastatin or pravastatin is **not** associated with greater reduction in LDL-cholesterol than that achieved with lovastatin or pravastatin alone. No adverse reactions unique to the combination or in addition to those previously reported for each drug alone have been reported. Myopathy and rhabdomyolysis (with or without acute renal failure) have been reported when another HMG-CoA reductase inhibitor was used in combination with immunosuppressive drugs, gemfibrozil, erythromycin, or lipid-lowering doses of nicotinic acid. Concomitant therapy with HMG-CoA reductase inhibitors and these agents is generally not recommended. (See **WARNINGS: Skeletal Muscle** and **PRECAUTIONS: Drug Interactions**.)

OVERDOSAGE: To date, there are two reported cases of overdosage with pravastatin, both of which were asymptomatic and not associated with clinical laboratory abnormalities. If an overdose occurs, it should be treated symptomatically and supportive measures should be instituted as required.

CAUTION: Federal (USA) law prohibits dispensing without prescription.

Revised April 1997
D3-B001-4-97

Bristol-Myers Squibb Company
Princeton, NJ 08543

J4-538F

Classic Trains!

Recapture the holiday magic you knew as a child.

With MAXI, the classic, large scale metal train from Märklin, you can relive the holiday magic of your childhood when large metal trains where a part of every holiday season. And because MAXI is made of metal, it can withstand a lifetime of serious indoor and outdoor play. A ready-to-run, MAXI American or European prototype starter set is the perfect gift for your child or grandchild. Rediscover the magic! For more information and the name of your nearest Märklin dealer call:

1-800-825-0888

märklin®

P.O. Box 510559, Dept. SM, New Berlin, WI 53151-0559
http://www.marklin.com/maxi

SM 12-7

ChefsChoice® TeaMate™
Professional Tea Maker 690

For the ultimate cup of tea!

- Tea prepared by the classic British and Samovar methods for delicious, full flavor, superb aroma and brilliant color!
- Automatically boils water, gently steams and unfolds leaves, preheats carafe, precisely times steeping cycle, blends and holds tea at the perfect serving temperature.
- Recommended by leading tea experts!

For information, call:
(800) 342-3255

© 1997 EdgeCraft Corporation, Avondale, PA 19311

sentences in capital letters, almost like logos: "WEAKNESS A CRIME" and "DON'T BE A CRIMINAL." *Physical Culture* was a big success. By the end of World War I, circulation had reached 500,000.

Each issue carried articles about sickly men and women who became healthy, strong and beautiful through proper diet and exercise. There were pictures of men in strongman poses and, as times grew more liberal, pictures of lightly clad young women. More than a few of the features bordered on the ludicrous. One contribution of a Spanish writer entitled "Why I Adopted Grass as a Diet" featured a photograph of the tuxedo-clad author gazing hungrily at a lush pasture. All the big ads were for Macfadden exercise products and books (he eventually wrote 79). The many small ads were for such merchandise as goiter remedies, trusses, cut-rate shoes, sex-advice manuals and electrical healing devices.

Macfadden was, it turned out, a man very much ahead of his time. He was for vigorous exercise, fresh air, firm mattresses, restrained eating, milk, vegetables and fruit, and whole wheat bread. He was against tobacco, alcohol, coffee and tea, corsets, prudery, overeating and white bread, which he called the "staff of death."

Throughout his life, Macfadden was his own best example of his teachings. He worked out regularly and had an exercise for every muscle, including his eyelids. When he was in his 60s, his features were so pronounced that his head looked like a textbook illustration of facial muscles. He even exercised his hair, pulling at it periodically throughout the day. He had a full head of hair, except for a round spot on top perhaps caused by standing on his head, and he wore it in the style of Albert Einstein.

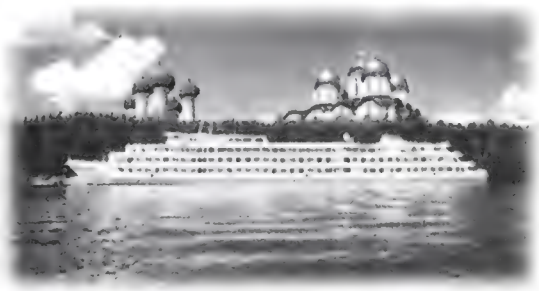
Among his admirers was novelist Upton Sinclair, who became interested in food-related issues after attending a Macfadden health camp. Sinclair

River Cruises

Your Best Vacation Value

Europe's Great Rivers

Sail on Europe's great rivers, discover an enchanting Europe away from busy highways and unpack only once. **Choose from 43 cruise itineraries, 7 to 21 days, on 15 ships**, including Europe's newest and most deluxe. From cruising through Holland at Tulip time to Grand Cruises from Amsterdam to Budapest, Uniworld gives you more choices and the best value. **From $1998 incl. airfare. Most shore excursions are included.**
Call for our 84-page brochure!



Russia & the Black Sea

See the **best of Russia** from the comfort of a cruise ship. Explore **Moscow & St. Petersburg** and cruise the "Waterways of the Czars", the fascinating rivers and lakes which connect them. Sail along the **Black Sea** coast, visit Yalta and Odessa, and cruise the Dnieper river, through the heart of Ukraine to Kiev. Choose from dozens of cruise itineraries, 10 to 21 days, on **the best ships in Russia & Ukraine. Shore excursions are included**, plus lectures, performances ashore and more. Perfect, all-inclusive, worry-free, one-unpacking holidays. Fantastic value. **From $1998 incl. airfare.**
Call for our 48-page brochure!

UNIWORLD

America's Leader in River Cruising through Europe and Russia

(800) 246-0558

Visit our website at:
www.traveluniworld.com

TRUE DETECTIVE
The UNPUBLISHED TRUTH about PRESIDENT HARDINGS DEATH
MISSING HOLLYWOOD BABIES KIDNAPPING RING
movie MIRROR
Why DOROTHY LAMOUR Lost ROBERT PRESTON
Judy Garland's GUIDE BOOK TO DATING
I WAS A CRIMP - CAN I COME BACK? A Frank Confession by Richard Arlen
Liberty 5¢
CRAZY EDUCATION: A Plea for American Youth by John Erskine
SEX CODE BEFORE MARRIAGE
Physical Culture
25
WHAT SHOULD BE DONE WITH LUST KILLERS? by Warden Richard A. McGee

Macfadden, who launched his first magazine enterprise in 1899 with *Physical Culture*, went on to create a publishing empire worth, at its peak, more than $30 million.

later wrote his muckraking novel *The Jungle*, which set off a federal investigation and led to the regulation of the meatpacking industry.

Another follower was Angelo Siciliano, who two years running won Macfadden's "America's Most Perfectly Developed Man" contest. With the winnings, he went on to establish his own muscle-building business under the name of Charles Atlas, whose advertising line "I was a 97-pound weakling" became a long-running national joke.

Readers who took Macfadden's advice about things he really knew improved their life and health. Unfortunately, Macfadden also offered advice on a subject he knew very little about—coping with illness. He maintained that any disease could be cured by exercise and diet. He also emphasized fasting. He reasoned that much of the body's energy went into digesting food: if there were no food to digest, then that energy could apply itself to recovering health. Macfadden claimed that fasting from three days to three weeks could alleviate and generally cure just about any disease, including asthma, bladder disease, diabetes, prostate disease, epilepsy, impotence, paralysis, liver and kidney disease, and eye trouble.

No matter what the sickness, Macfadden had a cure. An all-milk diet, he said, could cure syphilis and other blood diseases as well as Bright's disease, cancer, epilepsy and goiter. His remedy for heart disease was hot and cold compresses, vegetables and cold water. The only treatment he accepted from conventional healthcare professionals was dentistry.

The American Medical Association didn't react publicly to his advice or his jibes. "The morons that take Macfadden seriously would not be convinced by anything we might publish," said Dr. Arthur J. Cramp, an AMA spokesman. Macfadden thought the silence ominous and for years harbored fears that the AMA was poisoning the wells on his Englewood, New Jersey, estate.

Campaigning against prudery was another Macfadden crusade. He believed that a well-developed body should be appreciated and admired. Late in 1905, he staged an exhibition of beauty and brawn at Madison Square Garden to publicize his magazine. To advertise the show he distributed posters of young women wearing two layers of union suit, the nearest thing to tights then permitted. The posters got the attention of Anthony Comstock, the founder and head of the New York Society for the Suppression of Vice, a private establishment, who had Macfadden arrested. Macfadden was found guilty of violating New York state law and given a suspended sentence.

As a result of the case, he found a friend and ally in George Bernard Shaw, who was being harassed by Comstock for the staging of his play *Mrs. Warren's Profession*. The two men visited each other frequently over the years. According to one of Macfadden's wives, they "sat up all night trading stories, comparing muscles and congratulating each other on having found the secret of eternal youth."

Readers of *Physical Culture* wrote to Macfadden for help with their personal problems: "I made this one mistake and now my wife wants to leave me" . . . "He promised to divorce his wife and marry me and now I'm going to have a baby." *Physical Culture* began printing those letters, and they got good readership. Macfadden concluded if that was what people liked to read, then they should get to read it in bulk.

In 1919, he launched *True Story*, the first confession magazine. Its stories were about men and women tempted into wrongdoing who eventually gained redemption. The wrongdoing

In Loving Memory of

Princess Diana

"Queen of Hearts"™

Original
This is the first Princess Diana memorial doll ever issued!

She was known as Diana Princess of Wales. But to those closest to her, she confided her dream was to be recognized as Queen – not of England, but of the people's hearts – in recognition of her commitment to those less fortunate.

She united her country – even the whole world – in peace and love through her work for the poor and oppressed. True to her dream, Princess Diana will forever be remembered as the "Queen of Hearts".

The Society for the Preservation of History has commissioned renowned artisans Loccisano and Brownell to capture the likeness of the beloved Princess in a one-of-a-kind porcelain collectible.

Limited Edition
Commemorative
Porcelain Doll
(Actual Height 18")

Individually Hand-Crafted Limited Edition*

Keep the dreams and memories of Diana alive in your home by owning an authentic "Queen of Hearts" doll. Each elegant, limited edition piece is hand-crafted of the finest porcelain. Once the casting of the dolls is completed the molds will be destroyed, ensuring these keepsakes of maintaining their unique value. Every minute detail is attended to, right down to the beautiful blue of her eyes and her genuine pearls. An engraved, individually numbered solid brass plate is adorned with the inscription "Queen of Hearts". Further, your "Queen of Hearts" doll comes with a stunning certificate of authenticity bearing your doll's edition number.

Reserve your Commemorative Doll Now

We are now accepting advance orders for a limited number of these collectibles, but you must act now, as we expect demand to exceed the limit of this edition. Upon ordering, you will receive immediate confirmation of the production of your doll. Due to overwhelming demand, orders are limited to 2 per household. Because these dolls are personally crafted, please allow 8 to 12 weeks for insured delivery. And, as always, your investment is protected by our 30-day satisfaction guarantee.

More than a Remembrance...
A Commitment To The Charities Diana Stood For

A portion of the proceeds from these beautiful commemorative dolls will be donated in your name to the Diana, Princess of Wales Memorial Fund. Charities supported by this fund include London's Great Ormand Street Hospital for Sick Children, The Leprosy Mission, Britain's National AIDS Trust, Victims of Anti-Personnel Landmines and Homeless Youths.

Special Note: Ask about our guaranteed holiday delivery. Call now for details.

1961-1997

Call toll-free, 24 hrs, 1-800-547-8000 Dept. 606, to make 5 easy charge payments of only $39.80 each (shipping is included). Your account will not be charged until your doll is shipped. Or, send your name, address and check (we can also take your check by phone) or money order to:

The Society for the Preservation of History
4461 112th Street, Dept. 606
UrbanDale, IA 50322-2086

© 1997, Society for the Preservation of History Inc.
* Limited Edition To Those Produced In The Next Year

BackSaver

Legs elevated above the heart for improved circulation and stress reduction.

Motorized Ease in the World's Most Comfortable Chair!

Easy access with retractable footrest.

FREE CATALOG

Health Products for Your Home, Office, and Personal Needs.

1-800-251-2225

BackSaver 53 Jeffrey Avenue, Dept. 02, Holliston, MA 01746

Eee Urrr... click...click wheeee!
LEARN TO SPEAK DOLPHIN. Treat yourself to a stay in Bermuda's most luxurious resort, and
playful new friends. In the beautiful 3-acre dolphin habitat we've opened at
Princess, you'll have the opportunity to actually meet and play with the
marine mammals. Space is limited, so sign up now for one of the special Dol
es. Who knows, you might learn some rather interestin
words. Call your travel agent or 1-800-223-1818.
Southampton Princess
BERMUDA
THE SOUL OF BERMUDA. THE HEART OF YOUR VACATION.
Represented by Princess Hotels International, Inc.

Covering his political bases in 1931, Macfadden tried to ingratiate himself with potential Presidential candidate Roosevelt.

was usually sex, but mostly by implication. There was nothing like *True Story*, and it found a market among a large group of people who normally did not buy magazines. It had been widely believed by editors of popular magazines and romance novels that secretaries and shop girls wanted to read about the love lives of duchesses and heiresses. Macfadden discovered that secretaries and shop girls were more interested in reading about the romances of secretaries and shop girls. *True Story* made him a wealthy man.

The success of *True Story* led to imitations from competing publishers. Macfadden's answer was his own imitations, *True Romance*, *True Experiences* and *Dream World*. After them came *True Detective Mysteries* and *Master Detective*. Subsequently he began *Model Airplane News*, *Your Home*, *Ghost Stories*, *Movie Weekly* and *Movie Mirror* and bought *Photoplay* and *Shadowplay*. His biggest magazine coup was acquiring *Liberty*, a weekly general-interest magazine that ranked behind the *Saturday Evening Post* and *Collier's*. By 1935 his magazines had a combined circulation surpassing those

of the other giants of magazine publishing, Hearst, Luce and Curtis.

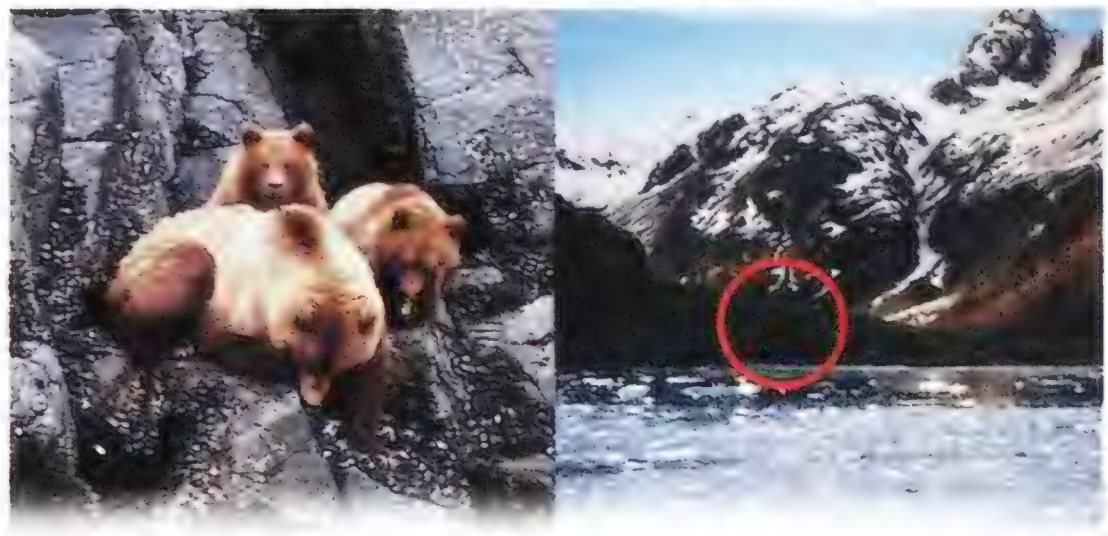
Wealth made little change in Macfadden. He looked like a bum. Disdaining fashion, he wore the same suit every day until it fell apart. Because of his appearance he was often refused admittance to his own office buildings. He had no talent for small talk. If the subject wasn't physical fitness, business or his brilliance, he wasn't interested. Except for Dickens, he read nothing for entertainment. Taken to an opera, he said: "Nobody can like this sort of thing. Anyone who says so is posing." He was enthusiastic, though, about the upper-body exercise the conductor was getting.

His only nonbusiness interest was women, and he pursued them throughout his life. When Macfadden was 66, a man sued him for alienating the affections of his wife. After the wife testified that she had an affair with Macfadden because she liked him better, the jury cleared him. At the offices of Macfadden Publications, a running joke was: "What time is it? It's always sex o'clock around here."

For many, the most exciting thing about Alaska is the wildlife. And there is simply no better way to observe the whales and grizzlies, sea lions and bald eagles than from one of our small ships. We get your clients closer to the "Great Land" of Alaska, calling on places other ships can't get to.

See your travel professional or call (800) 888-9378 for a brochure.

Our bear. Their bear.



Alaska Sightseeing
CruiseWest
The Leader in Small-Ship Cruising
www.cruisewest.com

Gifted.

This season, the acclaimed Bose® Acoustic Wave® music system makes a very special gift. Ideal for anyone who loves music, this all-in-one system produces rich, lifelike sound that *Stereo Review* called "possibly the best-reproduced sound many people have ever heard." The secret is our patented acoustic waveguide speaker technology. The system includes an AM/FM radio, a CD player, and a handy remote control. And it's available directly from Bose. Call or write today for more information. And see why it's the most gifted compact music system you can give.

Mr./Mrs./Ms.
Name Telephone
Address
City State Zip
Mail to: Bose Corporation, Dept. CDD-A2485, The Mountain, Framingham, MA 01701-9168.

Call 1-800-898-BOSE, ext. A2485.

BOSE®
Better sound through research®

Covered by patent rights issued and/or pending. Quote: Julian Hirsch, *Stereo Review*, March 1985

YOUR BEST VACATION VALUE EVER!
The Mediterranean & Greek Isles 14-Day CruiseTour
FROM ONLY $1,699 PER GUEST
Including:
10-DAY MEDITERRANEAN CRUISE
aboard the Aegean I
FREE Round-trip air from New York (JFK)
FREE Stay at Athens' Divani Caravel Hotel
FREE Stay at Istanbul's Conrad Hotel
FREE Silver Wings Plus Membership
SilverWingsPlus
United Airlines
EXCLUSIVE SAIL DATES
January 30 • February 9 • February 19
March 1 • March 11 • March 21
Hurry! Offer expires December 31, 1997.
Renaissance Cruises
Call toll-free 1-888-242-7577 for your free brochure.
Port and ground handling charges are $399 per guest additional. Attractive air add-ons available from other NYC gateways. Ships' registry: Greece.

Desert Flowers
2204E Desert Flower Earrings
Clipped or pierced
$62
954NE The Set $168
3803P Desert Flower Turquoise Pin/Pendant
$128
20" sterling rope chain
Pendant 2" long
Send $3 for catalog
MARY LAURA'S
SOUTHWESTERN ARTS
VISA/MC/AM EX $3 Shipping & Handling
Mary Laura's • 1-800-662-4848
Box 12615-SM, Albuquerque, NM 87195-0615 USA

Although Macfadden was a strong advocate of marriage and family, he didn't handle these institutions very well himself. He married for the first time at 30 and the second time at 35, but neither union lasted two years. Then, while on a lecture tour in England, he met and married Mary Williamson, a 19-year-old swimming champion. He was then 45. He made her part of his show, posing her in flesh-colored tights. The high point of each evening was when 142-pound Mary jumped from a platform to land feetfirst on the abdomen of Macfadden, who was lying on the stage seven feet below.

Bernarr and Mary produced seven children, and he inflicted his medical theories on all of them. When a son, 11-month-old Byron, went into convulsions, Mary Macfadden pleaded for a doctor. Bernarr refused and insisted on putting the child into a hot bath. The boy died an hour later.

Macfadden and his fourth wife, Johnnie Lee, demonstrate an exercise for the hair.

COPPER CANYON
BATOPILAS & COLONIAL ALAMOS
Customized Sierra Madre rail excursions with our exclusive naturalist-trained native guides to a canyon deeper than the Grand Canyon. Cliff-dwelling Tarahumara Indians; Mayo Indian villages; canyon descents; cascading waterfalls; horseback riding; mountain lodges in pine forests & historic hacienda hotels in tropical colonial towns. Daily departures.
OPEN MON-FRI 9 AM - 6 PM CT 1-800-843-1060
COLUMBUS TRAVEL, 900 RIDGE CREEK, BULVERDE, TX 78163

PUZZLE ART
Heirloom quality, intricately handcut wood jigsaw puzzles personalized with silhouettes & messages.
$135 and up
Call or write for free catalog:
(612) 827-5757
Dept. $73, 4255 Garfield Ave. S.
Minneapolis, MN 55409-1858
http://www.rainylakepuzzles.com
Rainy Lake PUZZLES

Spice of the Month
Featuring 2 hard-to-find exotic spices and full-leaf herbs delivered monthly from the finest growing regions on earth.
A WONDERFUL GIFT 1-800-FULL-LEAF

HIEROGLYPHS
PERSONALIZED CARTOUCHE JEWELRY
Translate Anything into Ancient Egyptian Hieroglyphs
SS Pendants from $40 • 18k from $150
Handmade in Egypt • Free Brochure has Alphabet
Pendants • Rings • Bracelets • Earrings
1-800-237-3358
Cartouche spells 'Joan'
Discoveries
Call Toll Free or Write to:
526 N. Fayette St., Dept. SM,
Alexandria, Virginia 22314
CELEBRATING OUR 16TH YEAR!

MISSING A PIECE OF YOUR PATTERN?®
Replace pieces or add to your sterling silver at up to 75% off retail. We specialize in new and used flatware and hollowware. Over 1,200 patterns in stock. Call or write for a free inventory of your sterling pattern. (We buy sterling silver, with a careful appraisal for maximum value.)
Pattern shown: Chantilly by Gorham.
Beverly Bremer
SILVER SHOP
3164 Peachtree Rd., NE, Dept. SM, Atlanta, GA 30305 / Mon.-Sat. 10-5
404-261-4009

www.dallaspridgenjewelry.com
DALLAS PRIDGEN JEWELRY
One at a time, by hand
"Dolphins" Bracelet
14K Gold $495, Sterling $145.
Pin or Pendant available. V/MC/Amex
Unconditionally Guaranteed. 1-800-477-1856
PO Box 147, Chapel Hill, NC 27514

The Perfect Holiday Gift!

COMPLETE

WEATHER STATION

PROFESSIONAL QUALITY ▲ EASY TO USE

Get a complete weather station for only **$495!**
You save **$100!**

▲ WEATHER MONITOR II®
▲ RAIN COLLECTOR (0.01" OR 0.2 MM)
▲ TEMPERATURE/HUMIDITY SENSOR

For more information, call.

1-800-678-3669

One-year warranty • 30-day money-back guarantee
S&H: Add $10 for US destinations; $15 for Canadian destinations. Call for expedited shipping

Davis Instruments
3465 Diablo Avenue, Hayward, CA 94545-2778 • www.davisnet.com

THE THREE GRACES. It was Aglaia who gave away, Euphrosyne who received and Thalia who gave back. The three graces are represented in this first century BC Greek relief, an embodiment of classical ideals. The original, found at Cyrene in North Africa, is now in The Louvre in Paris. The 16"x16"x2½" bonded marble sculpture is prepared for wall hanging; elegant decor for any room including the bath...$193 ppd. Check, VISA, MC. Unconditional guarantee. **128 page color catalogue of 400 statues, Greek vases, reliefs, frescoes...$6.**

ELEGANZA LTD. *Importers of Fine Statuary*
Magnolia Village • 3217 W. Smith #5312
Seattle, WA 98199 • 206/283-0609

At the age of 84, a spry Macfadden joins the Bluebell chorus girls in Paris.

With the surge in income from *True Story*, Macfadden founded the infamous *New York Evening Graphic* in 1924. According to his close associates, he started the *Graphic* so that it could give him the publicity he couldn't get from the other newspapers. "[It] was to be his magic carpet . . . to the White House," said Fulton Oursler, Macfadden's longtime chief editor.

There were two sensational tabloid dailies in New York in 1924, the *Daily News* and the *Mirror*. Macfadden decided to out-tabloid them. His *Graphic* specialized in covering sex, scandal and violence. It was heavy on photographs. When it couldn't get a photograph of some sensational event, such as a sex scandal or a hanging, Harry Grogin, the art director, made a "composograph," a picture made up of other photographs, often of scenes created with members of the *Graphic* staff.

The *Graphic*, referred to by many as the "pornoGraphic," was a hit with the readers, but its content was too racy for many big advertisers. It lost money steadily and went into bankruptcy in 1932.

The *Graphic* supported Jimmy Walker in his successful 1925 campaign to become the mayor of New York. Macfadden hoped he could enter politics by being appointed the city's commissioner of health. Walker didn't offer him the job. "Everybody knows you can live to be a hundred

GIVE A LITTLE

Tenderness!

Send specially-priced Holiday Gift Packages of world-famous Omaha Steaks.® So tender and juicy. Delivered nationwide unconditionally guaranteed!

Hurry...your gift orders must be received by December 21st for delivery in time for Christmas enjoyment!

#1135 4 (5 oz.) **Filet Mignons,**
Save $17.00 Regularly $41.99 NOW $**24.99**
(PLUS $9.95 SHIPPING)
*Order now and receive 6 **FREE** 1/4 lb. Homestyle Burgers*

#515 8 (6 oz.) **Filet Mignons,**
Save $20.00 Regularly $79.99 NOW $**59.99**
(PLUS SHIPPING)
*Order now and receive 6 **FREE** 1/4 lb. Homestyle Burgers*

Special Holiday Prices Expire 12/31/97.
(EXTRA CHARGE FOR ALASKA / HAWAII / CANADA GIFTS)
Have a Major Credit Card Handy and Call Toll Free
1•800•228•9055

PREMIUM HEARTLAND QUALITY
OMAHA STEAKS
SINCE 1917

Dept. AF7120 • http://www.omahasteaks.com

GEVALIA®
FINE COFFEES OF EUROPE

ENJOY A RARE TREAT.
SAMPLE GEVALIA KAFFE
AND RECEIVE A FREE
HOLIDAY ORNAMENT.

Treat yourself to a 1/2 lb. of some of Europe's finest coffee for just $3.95 plus s&h, and we'll give you an antiqued pewter, custom-designed ornament as a gift.
No further purchase required.

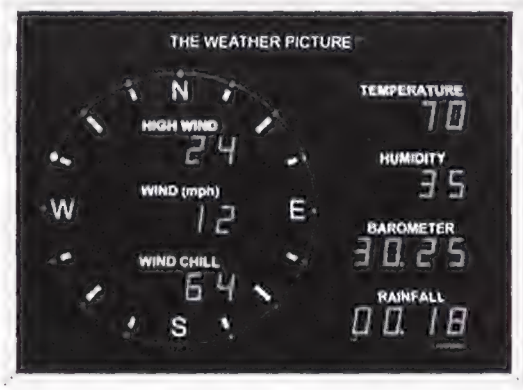
QUANTITIES ARE LIMITED
1-800-GEVALIA
(1-800-438-2542)
PLEASE ORDER TODAY

©1997 Gevalia Kaffe www.gevalia.com 661173

COPPER CANYON
Costa Rica and More
Explore Mexico's Copper Canyon, Costa Rica, Patagonia and many other exciting destinations. Deluxe escorted trips and custom adventures. For free newsletter 1-800-926-1140
The California Native, 6701 W. 87 Pl, Los Angeles, CA 90045

The Owl & the Pussycat
James Breakell's fanciful pair perched in a runcible spoon pin. Sterling silver $40, 14k gold $380. Add $4 handling. Satisfaction guaranteed. Catalog available. (800) 767-6411.
2" long
J.H. Breakell & Co.
132 Spring St., Dept. SMOP, Newport, RI 02840

TURKEY
GREECE & EGYPT
Quality tours stressing History, Culture, Folklore, & People. Great food and Photography.
Bora Özkök's
Cultural Folk Tours Int'l
9939 Hibert St., Ste. 207
San Diego, CA 92131-1031
Registration #2011417-40
Call for a free brochure:
http://www.boraozkok.com/
1-800-935-8875
619-566-5951



Size shown: 15 3/4" x 11 7/8"
Put the weather on your wall
The Weather Picture® is an eye-popping new wall unit that continuously displays all the vital weather data you have selected, without having to press a single button. Big red numerals are easy to read, from across the room, day or night. Available in two sizes, in brushed aluminum or elegant solid teak frame. The separate control unit provides detailed data--more than enough to satisfy even the most dedicated weather buff.
Introductory Savings up to 28%
Complete Weather Picture Systems from under $300. Weather Picture add-on for ULTIMETER® Weather Stations from under $100 (introductory prices valid thru 1/31/98).
For complete details, call toll-free, fax, or write us. Or visit our Web Site to see and try our ULTIMETER Systems. "The best!" says *WeatherWatch* magazine (5/96).
1-800-USA-PEET
or 732-531-4615 FAX: 732-517-0669
www:peetbros.com
PEET BROS COMPANY
1308-712S Doris Ave., Ocean, NJ 07712

In his magazines and personal life, Macfadden, seen here about 1920, advocated health, exercise and an end to prudery.

by following Macfadden's ideas," said Walker, who became known as the playboy mayor. "But New York wants to live the way I do. That's why I was elected. We won't last as long, but we'll have more fun."

In 1928, Macfadden sent one of his executives to Tammany Hall, the central force of the New York Democratic Party, to ask how much he needed to donate to be nominated for the governorship of New York. Judge George W. Olvaney, the boss of Tammany Hall, rejected the idea. "When you imagine Bernarr Macfadden as a candidate, you immediately think of the fun he'd stop you from having if he got elected," said Olvaney.

That year Macfadden pursued both Republican Presidential nominee Herbert Hoover and Democratic Presidential nominee Al Smith to create a federal Department of Health, with him as Secretary. When Hoover was elected, Macfadden and his publications supported him. When Roosevelt defeated Hoover in 1932, Macfadden promptly supported Roosevelt.

Macfadden's powers of persuasion were as formidable as his physique. Somehow he was able to convince Eleanor Roosevelt to become the editor of a new magazine, *Babies—Just Babies*. Apparently he reasoned that if he could insinuate himself into Mrs. Roosevelt's favor, he could maneuver his way to becoming the first Secretary of Health. He thought that President Roosevelt's health would fail soon, and who would make a better replacement than a conspicuously vigorous member of the Cabinet like himself? Although she was probably not aware of those machinations, the First Lady had the good sense to withdraw from *Babies—Just Babies* soon after her appointment.

By 1935, the Macfadden press had turned anti-Roosevelt. Later that year, while attending a luncheon of the Republican Club of St. Louis, Macfadden declared that if the Republicans offered him their nomination for the Presidency, he would not refuse it. His announcement triggered a surge of apathy among Republican leaders

Macfadden lands exuberantly at the Dansville, New York, airport after making a parachute jump on his 81st birthday.

and giggles throughout the country. Subsequently he tried and failed miserably to get himself elected governor of Florida and mayor of New York.

Macfadden's political ambition contained the seeds of his financial ruin. In 1924, he incorporated his privately held Physical Culture Publishing Company as Macfadden Publications, Inc., and sold its stock publicly. As president of the corporation and majority owner of its stock, he felt entitled to use corporate funds for political donations, publicity agents, airplanes and private expenses. In 1940, stockholders filed suit in federal court, accusing Macfadden of spending about $900,000 of the corporation's money for his own personal and political expenses. In a settlement, Macfadden resigned as president, sold his stock to the new management and paid $300,000 to the corporation.

He was left with something called the Bernarr Macfadden Foundation, which he had formed years earlier to spread his teachings. Through it he published a magazine called *Health Review*, a tepid reincarnation of *Physical Culture*. He wasn't poor, but he was running out of money. He tried to stay in the public eye with Cosmotarianism, the religion he founded in 1947. It was based on the idea that those who took good care of their bodies would go to heaven.

At the age of 80, Macfadden married for the fourth time. (He and Mary were divorced in 1946 after years of separation.) His bride was 42-year-old Johnnie Lee McKinney, a professional health lecturer. Macfadden insisted that they maintain separate apartments and not intrude on each other without calling first. The idea, he explained, was to keep the marriage fresh, the dew always on the rose. When Johnnie Lee violated that rule one day, she found her 82-year-old husband in bed with another woman. After accumulating further evidence of Macfadden's unfaithfulness, she divorced him.

The final years witnessed a reversal of Macfadden's rags-to-riches trajectory. He was twice jailed for nonpayment of alimony to Johnnie Lee.

In the fall of 1955, he suffered intestinal problems and began fasting to cure them. The manager of the seedy New Jersey hotel he lived in found him unconscious and called an ambulance. Luckily for his peace of mind, Macfadden was probably not aware of what he would have considered the ultimate humiliation. He was taken to the Jersey City Medical Center, where he was x-rayed, fed intravenously and treated by a team of doctors. His problem was diagnosed as jaundice aggravated by fasting. When he died not long after being admitted, the onetime multimillionaire's estate amounted to less than $5,000. He was 87—a ripe old age, to be sure, but still more than 60 years short of his lofty goal.

As a child, Brooklyn-based writer Joe Wilkinson peddled Macfadden's Liberty magazine from door to door for 5 cents a copy.

COSTA RICA
Wildlife Sanctuary of The Americas
INTERNATIONAL EXPEDITIONS INC
WORLD LEADER IN NATURE TRAVEL
1-800-633-4734
ONE ENVIRONS PARK HELENA, AL 35080

THE POKE BOAT®
IT'S EVERYTHING A CANOE ISN'T.
A canoe is tippy. A Poke Boat isn't. It's remarkably stable.
A canoe is hard to turn and difficult to keep in a straight line. A Poke Boat isn't. It stays in a straight line, yet is easy to maneuver.
A canoe is heavy. A Poke Boat isn't.
It weighs only 22 pounds - built with aircraft strength.
You can buy more than a canoe.
For more information, give us a call.
606-986-2336.

PACIFIC AIRCRAFT
THE COLLECTOR'S CHOICE
Makers of Fine Aerosculptures
Hand carved from solid mahogany. Exquisitely hand painted markings and details. • Museum quality • Sizes 16" to 22" • Stand included
• From $99.50
• Over 250 Models
Satisfaction Guaranteed
CALL (800) 950-9944 FOR CATALOG AND ORDERS
14255 N 79th Street, Scottsdale, AZ 85260
Phone (602) 991-1841 • http://www.warplanes.com

www.dallaspridgenjewelry.com
DALLAS PRIDGEN JEWELRY
One at a time, by hand
"On Parade" Bracelet, 11 links
14K Gold $595, Sterling $165. V/MC/Amex
Unconditionally Guaranteed. 1-800-477-1856
PO Box 147, Chapel Hill, NC 27514

BOOKS ON TAPE® #1
World's Largest Selection™
10 lb PENALTY
DICK FRANCIS
• Best Sellers on Cassette
• Full-length Readings
• Call for More Information
http://booksontape.com
(800) 88-BOOKS

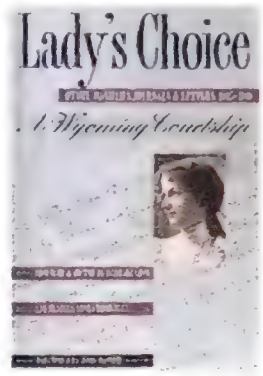
In her journal, Waxham captured the people around her with insight and humor.

Lady's Choice: Ethel Waxham's Journals and Letters, 1905-1910

Compiled & Edited by Barbara Love
and Frances Love Froidevaux
University of New Mexico Press, $16.95

Homesteading: A Montana Family Album

Percy Wollaston
Lyons Press, $20



Five years is a long time for a man to wait for a woman, but Ethel Waxham was no ordinary woman. After graduating from Massachusetts' Wellesley College in 1905 with a degree in classical literature and a Phi Beta Kappa key, the 23-year-old accepted a teaching position at a one-room school in Wyoming—a log cabin where ink froze in inkwells and snow drifted gently in the corners.

Waxham kept a journal during her sojourn in Wyoming, and later when she taught Greek and Latin in Wisconsin. Her two granddaughters have used the journals, along with Waxham's poetry and correspondence from 1905 to 1910—the time it took her suitor, John Galloway Love, to win her hand—to create *Lady's Choice*, the tale of a remarkable woman and a remarkable courtship.

Within days of her arrival at the ranch where she would stay during her teaching stint—a 24-hour stagecoach ride from the nearest railroad station—Waxham began her journal, capturing the people around her with uncanny insight and humor. There's Ida Franklin who was "frivolous even in her silence," and Old Pelon who, asked if he regretted his wife's demise, replied simply, "No, she a dev'."

Waxham developed a fondness for the ragtag students, who surely must have seemed light-years removed from the intellectual companions of her Wellesley days. When she asked one gangling fellow how many eights are in ninety-six, he thought for a while. "Finally," she writes, "he says with such a winsome smile that I wish with all my heart it were true—'Two.'" And when she quizzed another about where digestion takes place: "Emmons thinks until a smile of enlightenment dances over his face. 'In the Erie Canal,' he answers."

Waxham's descriptions of her surroundings are as unadorned and powerful as the landscape itself. "The bluffs loomed large and dark against the moonlit sky; the shadows grew like the silence, crisp and clear cut," she writes in one journal entry.

Waxham met John Love, a 35-year-old sheep rancher, soon after her arrival. Given the space she allotted him in her journal, Mr. Love, as she called him, clearly made an impression—if not altogether favorable. "His face was kindly, with shrewd blue twinkling eyes. . . . But his voice was most peculiar and characteristic. Close analysis fails to find the charm of it. . . ."

John Love found no fault with the new schoolteacher. From the day he met her, he worked doggedly to win her, continuing the courtship by mail after Waxham left the ranch. Regarding his letters, Waxham wrote, "'No' was 'no' to other men, but not to him. . . . I was nearly as stubborn in refusing as he was in insisting."

Nearly, but not quite. It's not clear what persuaded Ethel Waxham to accept John Love's proposal, but in the end Love—and love—won out. Perhaps it was her disillusionment with the teaching profession that began at the prison-like convent school in Wisconsin and deepened with the tedium of a high school French class in Pueblo, Colorado. Surely the pure, deep devotion that shines through Love's letters must have played a part.

On June 20, 1910, Ethel Waxham and John Love were married, and the new bride moved back to Wyoming and a life that even her earlier stay hadn't prepared her for. It was, as she described, the "ranchiest kind of ranch life," with no electricity, phone or indoor plumbing. But as her granddaughters noted in the epilogue, "Plato and Proust and the *New York Times* were just as easily enjoyed by kerosene lantern . . ."

In a foreword to the book, writer John McPhee observes of Waxham that "the admiration and affection I came to feel toward her is probably matched by no one I've encountered in my professional life." After reading *Lady's Choice*, one can understand why.

Percy Wollaston moved from the Dakotas to the plains of eastern Montana in 1910, the year that Ethel Waxham married. Then 6 years old, Wollaston remained on the family homestead until 1924 when he took the train west, and away.

Wollaston married and settled in Thompson Falls—the wet side of Montana—and, seemingly, forgot the heartache of his parents' struggle where "the land itself was inexorable." For years he did not speak of his childhood to his own children.

Then, in 1972, Wollaston's wife

died. That year, he began writing about those early homesteading years in a memoir meant for his grandchildren. "My account can be only the recollections of a child or boy, hazy and distorted by time. . . ." he writes. But he was wrong. His memories flow as naturally as his writing, and the reader is transported back to the day when a 6-year-old stepped from the train into a new life. "The day was chilly, a drizzling rain was falling and a general gloom seemed to have settled over the land."

Not all Wollaston's memories are so grim. "The clearest recollections center around that old lean-to kitchen," he writes of the house his father built on the 320-acre claim. "The crackle of juniper kindling, the rasp of coffee being ground in the mill, the clink of stove lids . . . and the sizzle of frying bacon."

As memories surface, Wollaston brings the past to life, writing about everything from coyote hunting to making butter to the place of honor held by the family's cherished sideboard. "If you found a rare enough treasure," he relates with innocent humor, "you might be allowed to keep it in the sideboard, like donating some artifact to the Smithsonian."

But "the summers seemed to get drier and the winters colder as time went on," and "little by little the town just withered away like some plant that dies and loses its leaves so slowly that the owner continues to hope for survival." Wollaston's parents were among those who abandoned the hostile land, traveling west to join their son.

In a beautifully written foreword to the book, Jonathan Raban relates that when Percy Wollaston handed his son the manuscript, he noted that it was "nothing much, probably not worth the trouble of reading." Nothing could be further from the truth.

Emily d'Aulaire writes reviews from her home in Connecticut.

Small Ships, Big Adventure

• Exotic Winter cruises in Belize, Panama, Orinoco, Caribbean & many more.
• Exclusive informal small cruise ships - it's like cruising on your friend's yacht!

American Canadian Caribbean Line
800-556-7450 www.accl-smallships.com

Washable Sheepskin Slippers & Boots

Write or Call:
Aussie Connection
135 NE Third Avenue
Hillsboro, OR 97124
1-800-950-2668
for a FREE Catalog

European Beret $10

100% Wool • One Size Fits All
Black, Navy, Brown, Red, Camel, Grey
Check or Credit Card w/Exp. Date.
Add $2 Shipping Per Order

John Helmer • Est. 1921 • (503) 223-4976
969 S.W. Broadway, Dept. S127 • Portland, OR 97205

JAPAN

For more information, please contact us at:
62 Sandy Brook Drive, New Britain, CT 06053
1-888-ASAHI-JC (Fax:1-860-826-5505)
http://www.asahi-jc.com
info@asahi-jc.com
朝陽 Asahi Japan Collectibles

98 Languages!

Yes, we have self-instructional audio-cassette courses in languages from Afrikaans to Zulu and everything in between. Short courses and long courses. Easy and in-depth. We have been serving language learners for 25 years. Call or write for our free 52-page *Whole World Language Catalog.*

AUDIO-FORUM®
THE LANGUAGE SOURCE
Room 4204, 96 Broad St., Guilford, CT 06437
1-888-773-2548 • fax: 203-453-9774
e-mail: 74537.550@compuserve.com

The Wedding Angel

Dramatic details highlights "The Wedding Angel"
(jewelry is shown larger than actual size)

14k-$517.50
18k-$632.50
Call for a free catalog:
1-800-295-5859

Lynn's Jewelry
Phone: 805-648-4714 • Fax: 805-648-1435
2434 Main Street, Ventura, CA 93003
Open Tuesday-Saturday

Rome Florence Venice
Tuscany Umbria Sicily
Amalfi Coast Lake District
CARAVELLA ITALIA

Escorted tours of Italy in small groups.

Call Toll-Free: **888-665-2112** www.seeitaly.com

A Gift of English Tea

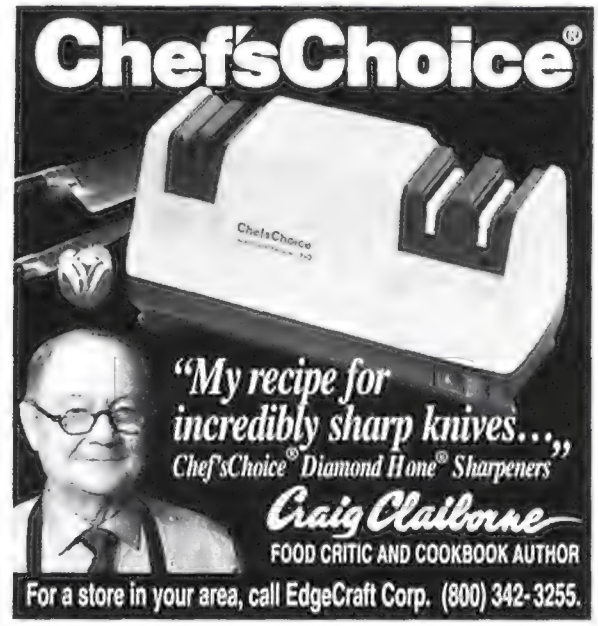
3 Gift Tins of Yorkshire's Finest
TAYLORS of HARROGATE
English Breakfast • Earl Grey
Spiced Christmas Tea
4.4 oz. each • Loose Tea or Tea Bags

. . . Gift Boxed with
The 1998 Collectible Teapot Calendar
Gorgeous Full Color !

Three Gift Tins of *Loose Tea* & Calendar $39.95
Three Gift Tins of *Tea Bags* & Calendar $49.95
Gift Boxed with Card and Shipped Free !

HIGH TEA 800-587-9595
Box 902, Harrisville, NH 03450 VS MC AX DS • Free Brochure

Chef'sChoice®



"My recipe for incredibly sharp knives...,,
Chef'sChoice® Diamond Hone® Sharpeners
Craig Claiborne
FOOD CRITIC AND COOKBOOK AUTHOR
For a store in your area, call EdgeCraft Corp. (800) 342-3255.

Swim at Home™

Swim or exercise against a smooth current adjustable to any speed or ability. Ideal for swimming, water aerobics, rehabilitation and fun. The 8' x 15' Endless Pool® is simple to maintain, economical to run, and easy to install inside or outdoors.

Call (800) 732-8660
For FREE BROCHURE
or visit www.endlesspools.com
ENDLESS POOLS®
200 E Dutton Mill Rd, Dept S10
Aston, PA 19014

Bargain Books

America's biggest selection. Save 30% on current books, up to 80% on overstocks. Biography, History, Politics, the Arts, Fiction—over 60 subject areas.

Free Catalog: 1-800-677-3483

Hamilton 5440 Oak, Falls Village, CT 06031-5005

Costa Rica · Belize · Africa · Galapagos

NATURAL HISTORY TRIPS WORLDWIDE SINCE 1982
P.O. Box 3656-N15
SONORA, CA 95370
CST 2007541-40

GEO EXPEDITIONS
Fulfill Your Dreams of Adventure
800 351-5041

Factory Direct • Handcrafted • Elegant
WOOL CAPES
Pure wool. 3 styles. 6 colors. People love the warmth - and the romance - of our capes. Brochure and Free swatches.
1-800-788-9842 or write:
Casco Bay Fine Woolens, 34 Danforth St. Box 25SM, Portland, Maine 04101

PLAYFUL CAT Pin
Sterling — $49.50
14K Gold — $375.00
Diamond eye add $36.00
VISA/MC/AMEX
1-800-235-0471
24 Hrs. 7 Days
S/H $5.75
velvet box
Size 2"W X 1-1/4"H
ROGER NICHOLS fine studios jewelry
17 NW Irving Avenue • Bend, OR 97701

Goose down robe
Surround yourself in warm, lightweight elegance. Supersoft easy care fabric. Contrasting piping, shawl collar and roll back cuffs. Fully guaranteed. Order in cream, peach, bluette, coral, navy, burgundy, or teal.
Sizes XS, S, M, L
Regularly $160
Sale $89
Shipping and handling $6.95

Goose Down Slippers match robes in cream, peach, bluette, coral, navy, burgundy, or teal.
XS, S, M, L. Regularly $38. Sale $22. Shipping $4.95
☐ Order by phone with MC or VISA, call 415/472-2154.
☐ Use MC, VISA or check for mail orders.
CA residents add 7.25% tax
WARM THINGS
180 Paul Dr., Dept. SO /San Rafael, CA. 94903
415/472-2154—Ship within 48 Hrs.—MC/VISA

House of Houses

Pat Mora

Beacon Press, $24

In this chronicle of a Mexican-American family over several generations, there are no skeletons in the closet. All the skeletons are sitting around the kitchen table or walking in the garden, cooking, drinking coffee, getting headaches, telling tales and arguing with each other, regaling their living heir, author Pat Mora, with recipes, proverbs, prayers and gossip. In *House of Houses*, Mora turns her family's old adobe casa, built along the Rio Grande between El Paso and Santa Fe, into a place where present and past tense are one, a realm where memory and imagination are fused in the style of magic realism.

Amid such layers of time and kinship, Mora is searching for and writing about those family qualities that are both unique and universal. This is not a book for readers who like all their ducks in a row. It's easy to get lost among the generations of ghosts and other relatives. But for a reader willing to stumble into the Mora family gathering and enjoy the fiesta without worrying too much about who's who, the book's real magic is in its portraits of ordinary people struggling to live ordinary lives.

For example, there's Mora's aunt Lobo, who goes to work at the Popular Dry Goods Company in El Paso in 1917 and works there until 1963. "I am a saleslady in piece goods and bedding, selling cloth of all kinds, satin, silk, pique, and blankets, bedspreads, sheets," Lobo says. "I do eighty inventories and my figures are always correct." As youngsters, Mora and her sister spend Sundays with their aunt. "After movies," writes Mora, "we walk to the train depot or the Greyhound station . . . and watch the trains or buses leave, enjoy a hot roast beef sandwich and mashed

DALÍ
COLLECT RARE SIGNED LITHOGRAPHS
FREE CATALOG
1-800-999-DALI
or (310) 798-1360
SILVERSTATE FINE ART

DON'T SEND JUST FLOWERS
Send a wonderful variety of spectacular flowering plants that will give pleasure throughout the year. Each month brings a different plant brimming with buds, guaranteed to arrive at its peak of beauty. Memberships available from 1-12 months.
Royal Bloom Club 1-800-656-BUDS

VIXEN HILL GAZEBOS

Discover our wide selection of modular, cedar Gazebos and screened GardenHouses, all designed for easy assembly by the non-carpenter.
Send $4 for our 32-page color catalog with project Vixen Hill, Dept. SM-7, Emerson, PA 19522 • 800-423-2766

GALÁPAGOS
You, 9 other adventurers and our licensed naturalist will sail by yacht to explore more islands than any other Galápagos expedition. 60 trip dates. Machu Picchu option. Free brochure.
Inca Floats 510-420-1550
1311-S 63rd St., Emeryville CA 94608

THE ROSE Pin
Sterling Silver $45.00
14k Gold $220.00
Matching Earrings
Sterling Silver $75.00
14k Gold $440.00
Velvet Box
1-800-235-0471
Visa, MC, AMEX—S/H $5.75
ROGER NICHOLS fine studios jewelry
17 NW Irving Ave. Bend, OR 97701

★Lifetime Warranty
★Nationwide Service
FREE 90 DAY TRIAL
Sleep Comfort
ADJUSTABLE BEDS
Free Video & Brochure
1-800-203-2473

potatoes. Lobo, the long-lived nutritional rebel who avoids fruits and vegetables, . . . urges us to drink the bubbles in our glass of milk because they signal money in our future."

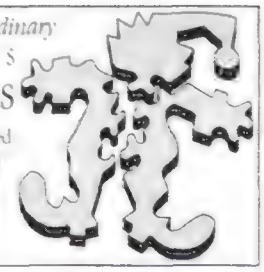
Mora's spinster aunt Chole tells the story of her great love, a radio announcer who reads poetry on the air; after she calls him anonymously to express appreciation, he devotes months to asking his mystery caller to reveal her name, professing his love for her. But she is blind, and never does.

Mora's writing adds to the magic, as in her description of the grandmother called Mamá Cleta, "who listens to the secret life of spiders, to beetles burrowing, pods swaying in the trees. She touches the yellow columbine, hears its clear, soprano melody calling to butterflies and bumblebees. . . . She goes to her room, brings out the book in which she writes her thoughts, her recipes and gardening lists. With the ink she scented with a decoction of lemon verbena, she writes, *'Sólo lo barato se compra con dinero,'* only what's cheap, can be bought with money."

Writing of her father's death, Mora evokes the suffering and love of a family as it cares for him through the cruel and sometimes comic stages of dementia. In a way, the whole meaning of the book is condensed in a scene at her father's bedside in the hospital. Mora's sister and mother reassure him as the doctors take him off for tests, sliding him into the dark metal cylinder of an MRI. "When he comes out of the room," Mora writes, "he's grinning. 'Honey! Honey! I did it! I'm the first Mexican to go into outer space! VIVA MÉXICO!'" And then, this: "At the end of their daily visit, Stella and Mother smooth his hair, straighten his pajamas. 'Remember, family is the most important thing,' he says. . . . 'I just want the family to stay together.'"

Paul Trachtman is a freelance writer who is based in New Mexico.

Certain gifts must simply be extraordinary
THE FAMOUS
Stave Jigsaw Puzzles
Since 1974, the finest handcut personalized



WHAT EVERY CAT'S BEEN HUNTING FOR

"Kitty Safari" is a video cats really watch, full of busy birds, mice, squirrels and more. Cats love it—some touch the screen, some look behind it. Great fun for kitties and their humans. 25 min. VHS
Call tollfree 1-800-557-3378
$19.95 - $3.95 P&H Visa/MC
Creative Dept. P.O. Box 69552 Portland, OR 97201

Healthy Solutions for Losing Weight
STRUCTURE · HOUSE ·
◆ Physical Health
◆ Emotional Renewal
◆ Beautiful Surroundings
◆ Personal Support
800.553.0052 ◆ http:www.StructureHouse.com

CAMBRIDGE COLLEGE PROGRAMME
College credit courses for teens at prestigious Queens' College, Cambridge, England
Teens 14-19 July 19 - Aug. 8
Adults July 26 - Aug. 1
Brochures U.S. Office:
1-800-922-3552; Fax: 312-988-7268
Est. 1986

World's Largest Inventory
China • Crystal • Flatware • Collectibles
80,000 Patterns • 4 Million Pieces
Discontinued & Active • Buy & Sell
Call for FREE lists of pieces in your patterns.
REPLACEMENTS, LTD.
1089 Knox Road, Greensboro, NC 27420 Dept. SM
1-800-REPLACE (1-800-737-5223)

The REAL CARIBBEAN
Discover over 300 small family-owned hotels, beach villas, cottages, inns & guest houses. Bargain to deluxe. All islands. Special airfares nationwide. Please call our island experts today.
1-800-333-0392
www.smallhotels.com
AAA

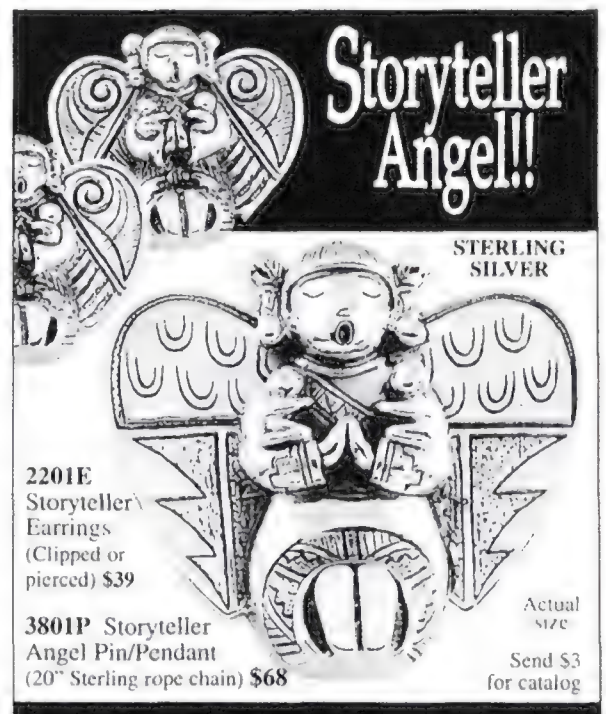
Velvet Box
HEART & DIAMOND Pendant
.05ctw Diamond, VS, G Color, Center Stone, w/20" chain
14k Gold $295.00
Sterling Silver $55.00
w/CZ Center Stone
Satisfaction Guaranteed
1-800-235-0471
VISA, MC, AMEX S/H $5.75
ROGER NICHOLS Sterling
17 NW Irving Ave.Bend, OR 97701
Actual size

SWISS ALPS
21st Year! Moderate Day hiking tours. 1-4 weeks. Ride above tree line and hike down. Optional length hikes basing weekly at 6 charming mountain villages in 3 or 4 star hotels. Call or visit our website for a free color brochure.
ALPINE ADVENTURE TRAILS TOURS
Toll Free: 888-478-4004
www.swisshiking.com
swissair

World's Largest Bronze Supplier
FREDERIC REMINGTON
BRONZE COLLECTION
MOUNTAIN MAN...$60
"Lost wax casting"
ALSO SILVER CASTINGS
Henry Bonnard Bronze Co.
1490 S. Hwy 17-92 • Longwood, FL 32750
1-800-521-3179 • Fax: 407-332-0531
"COMPLETE COVERAGE OF THE SOUTHEAST AND MID-ATLANTIC STATES"
Call or Write for Catalog
Bases and shipping additional

Retriever Pin
Sterling Silver $40.00
14k Gold $210.00
14k w/Diamond Eye $286.00
Satisfaction Guaranteed
1-800-235-0471
Visa, MC, AMEX S/H $5.75
Velvet Box
ROGER NICHOLS Sterling
17 NW Irving Ave.Bend, OR 97701
Actual size

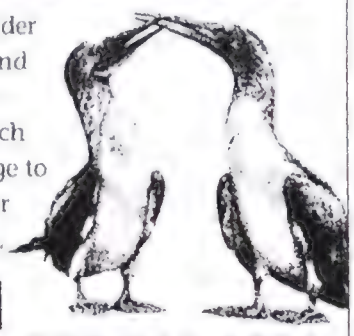
Step Back!
Step back into history, into a realm of chivalry and honor, to times long gone yet brought back in the pages of our unique catalog. From the days of Camelot and the Japanese Samurai, Ancient Egypt to the Civil War. The finest replicas of swords, armour and other historic reproductions. Step back into The Noble Collection.
Free color catalog
1-800-806-6253 code SM 127
The Noble Collection
P.O. Box 1476 Dept. SM127
Sterling, VA 20167

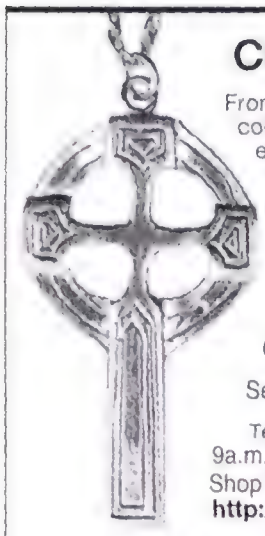


Storyteller Angel!!
STERLING SILVER
2201E Storyteller Earrings (Clipped or pierced) $39
3801P Storyteller Angel Pin/Pendant (20" Sterling rope chain) $68
Actual size
Send $3 for catalog
VISA/MC/AM EX
$3 Shipping & Handling
Mary Laura's • 1-800-662-4848
Box 12615-SM, Albuquerque, NM 87195-0615 USA

LONDON FLATS
Best London Locations
35 Cotswold Cottages
Mr. Thomas Moore/The London Connection
PHONE: 801-393-9120; FAX: 801-393-3024

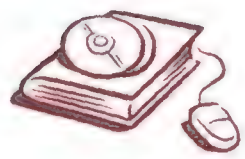
NEW AUTHORS
PUBLISH YOUR WORK
ALL SUBJECTS CONSIDERED
Fiction, Biography, Religious, Poetry, Children's
AUTHORS WORLDWIDE INVITED.
WRITE OR SEND YOUR MANUSCRIPT TO
MINERVA PRESS
2 OLD BROMPTON ROAD, LONDON SW7 3DQ, ENGLAND

GALAPAGOS
Join the World Leader in Nature Travel and expert guides from the Darwin Research Station on a voyage to ten islands. Call for details & brochure.

INTERNATIONAL EXPEDITIONS INC
800-633-4734
E-MAIL intlexp@aol.com • INTERNET http://www.ietravel.com/intexp


CELTIC CROSS
From our extensive Celtic jewelry collection, a pendant simply executed in silver or gold. Shown full size.
No. 2270 Celtic Cross
Sterling silver $38.00
(24" sterling chain)
14 kt. gold $300.00
(chain not included)
Add $5.00 for handling.
Check, M/C, Visa or Amex.
Send for our unique catalog.
Telephone 1-800-324-4934
9a.m.–5p.m. Pacific Time Mon–Sat
Shop through our on-line catalog at:
http://www.davidmorgan.com/
David Morgan
11812 North Creek Pkwy. N., Suite 103, Bothell, WA 98011

Celebrate July 4th & All Events
CARBIDE CANNON
BIG BANG! $119.95

Mammoth Cannons shoot with terrific BANG! Have a bang-up time at special events. Uses powdered carbide ammo. Hundreds of shots for few cents. All metal construction with large, rugged cast iron wheels. Machined brass mechanism for easy loading and firing. Authentic turn-of-century design. Handsome decor when not in use. Made in USA to last a lifetime. Available in 3 sizes: 9" cannon, $49.95 postpaid; 17" cannon, $89.95 postpaid; 25" cannon (shown here) with rapid firing and automatic loading, $119.95 postpaid. The larger the cannon the louder the bang! Carbide ammo, about 100 shots, $6.00; 3-pack $15.00. Spark plugs, 3-pack $2.00. Send check, money order or call. Visa, MasterCard accepted by mail or phone. Give card number & expiration. Money-back guarantee. Send for FREE CATALOG!
The Conestoga Co., Inc., Dept S, PO Box 405, Bethlehem, PA 18016
★★ Call 1-800-987-BANG ★★
www.bigbangcannons.com

ADDITIONAL

SOURCES

Around the Mall [p. 29]

Global Volcanism Program Website: www.volcano.si.edu/gvp/

Inside Hawaiian Volcanoes, produced by Maurice P. Krafft and narrated by Roger Mudd, Smithsonian Video Library, 1989 (Can be ordered from 800-343-4727)

Volcanoes of the World by T. Simkin and L. Siebert, Geoscience Press (Tucson, Arizona), 1994

The Object at Hand [p. 32]

American Indian Lacrosse: Little Brother of War by Thomas Vennum, Jr., Smithsonian Institution Press, 1994

U.S. Lacrosse, 113 West University Parkway, Baltimore, Maryland 21220

Highlights [p. 36]

Sport in Art from American Museums: Inaugural Exhibition of the National Art Museum of Sport (exhibition catalog), edited by Reilly Rhodes, Universe (New York), 1990

Bosque Redondo [p. 46]

The Kit Carson Campaign: The Last Great Navajo War by Clifford E. Trafzer, University of Oklahoma Press, 1982

Navajo Stories of the Long Walk Period, edited by Ruth Roessel, Navajo Community College Press (Chinle, Arizona), 1973

The Long Walk by L. R. Bailey, Westernlore Press (Los Angeles), 1964

Ferrari [p. 58]

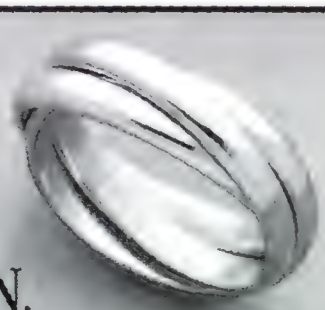
Ferrari: The Man And His Machines by Pete Lyons et al., Publications International, Ltd. (Lincolnwood, Illinois), 1989

Ferrari: A Memory by Gino Rancati, Motorbooks International (Osceola, Wisconsin), 1989

Ferrari Website: www.ferrari.it

VIETNAM May 9-22
LAOS, CAMBODIA May 21-28
escorted tour
also available: China, Tibet, Nepal, Bhutan
exotic travel with
NINE DRAGONS TOURS
1-800-909-9050 FAX: 765-289-3937
E-MAIL: DRAGONS9@SPRYNET.COM

American Blind & Wallpaper Factory
• Save up to 82% Off all 1st Quality Name Brand Blinds and Wallpaper!
• Over 4 Million Satisfied Customers Coast to Coast!
1-800-735-5300
909 N. Sheldon Rd. • Plymouth, MI 48170
www.abwf.com
Call now to receive a price quote, place an order or get your FREE Blind Kit or Wallpaper Catalog!
$2 postage & handling applies to wallpaper catalog only.

THREE COLORS YOU'LL LOOK GREAT IN.

It's the famous designer tri-color ring in solid 14k yellow, pink and white gold - $149. Bracelet - $379. Earrings - $159.
Call 800-725-1520
Visa/MC - S&H $4. - Satisfaction Guaranteed - Check or M.O. to:
Marc Simon Fine Jewelry, 19360 Rinaldi St., Suite #501, Porter Ranch, CA 91326

HIGH ARCTIC
CRUISES
Climb aboard the world-class icebreaker *Kapitan Khlebnikov* and ply the icy waters of **Canada & Greenland**. Or, visit **Spitsbergen & Coastal Norway** aboard the *Clipper Adventurer*. Both trips offer spectacular wildlife, numerous shore excursions & visits to remote villages & archeological sites. **From $4,330.**
For a brochure call:
TravelWild Expeditions (800) 368-0077
or e-mail: info@travelwild.com
SM31

The Mothers Medallion
Can a moment last forever? Her enduring reminder of devotion and this most precious time. On reverse—A guardian Angel awaits the engraving of your choice.
Large enough for several names and dates. Two sizes -7/8 in. and 1 1/4 in.
14k gold-$440, $445
pure silver-$40, $45.

Call for free a brochure:
1-800-295-5859
Lynn's Jewelry
Open Tuesday-Saturday
Phone: 805-648-4714 • Fax: 805-648-1435
2434 Main Street, Ventura, CA 93003

MAINE WINDJAMMING

4 & 6 day smoke-free vacations
Sail in style from Camden, Maine
on beautiful Penobscot Bay
FREE BROCHURE
★ 1-800-469-4635 ★

BUFFALO RANCHING makes good ecological sense for the American prairie. Please write or call for free catalog of a full range of buffalo products to:

Thundering Herd Buffalo Products
PO Box 1051, Dept. SM12
Reno, NV 89504
1-800-525-9730

PRIVATE ISLAND

Only house on private island. At ocean inlet on North Carolina coast. In Bear Island natural area. High sea-oat-covered sand dunes. No roads. No cars. Spectacular views. New house, boat and motor. $1,495.00 per week

Sand Islands Refuge • 1-919-728-2503
500 Front Street • Beaufurt, NC • 28516

Cartouche

Capture the Power of the Ancients with this Magical good luck Talisman.
Your Name in Heiroglyphics.
18K Solid Gold & Sterling Silver.
•Protective Charms •Powerful Amulets
•Beautiful Gifts •Flower of Life
Catalog of Unique Imported Handmade Egyptian Jewelry & Gifts
For a Free Catalog Call
1-800-283-4978
P.O. Box 309-SM, Delmont, PA 15626
E-mail:SM@CartoucheLtd.com

PICTURE CREDITS

128, 129 Collection of Jane Martin; **130,131** Plane and jet fighter: Collection of Jane Martin; car, boat and motor bike: Collection of International Folk Art Museum, Sante Fe; table and chairs: Collection of Julius Kassovic; **132,133** Truck, train, helicopter, horse and cart: Collection of International Folk Art Museum; radio: John Bigelow Taylor/American Museum of Natural History, catalog #90.2/6811; animals: John Bigelow Taylor/Collection of Julius Kassovic.

Great American Desert [p. 70]

"Great Plains or Great Desert?" by William K. Stevens, *New York Times*, May 28, 1996

"Evidence of Active Dune Sand on the Great Plains in the 19th Century from Accounts of Early Explorers" by Daniel R. Muhs and Vance T. Holliday, *Quaternary Research*, vol. 43 (1995)

Monahans Sandhills State Park, Box 1738, Monahans, Texas 79756; 915-943-2092. Website: www.tpwd.state.tx.us/park/monahans/monahans.htm

Getty Center [p. 82]

Getty Center Website: www.getty.edu

The House of Getty by Russell Miller, Henry Holt and Company, 1985

Richard Meier by Philip Jodidio, Taschen (Cologne, Germany), 1995

The Getty Center Design Process by Harold Williams et al., J. Paul Getty Trust (Los Angeles), 1991

Timber Rattlesnakes [p. 96]

Rattler Tales from Northcentral Pennsylvania by C. E. Brennan, University of Pittsburgh Press, 1995

Landscape with Reptile: Rattlesnakes in an Urban World by Thomas Palmer, Ticknor & Fields, 1992

Venomous Reptiles of North America by Carl H. Ernst, Smithsonian Institution Press, 1992

The Amistad [p. 114]

Mutiny on the Amistad by Howard Jones, Oxford University Press, 1987

Black Odyssey by Mary Cable, 1971, reprinted by Penguin Books, 1977

"The Amistad Case and Its Consequences in U.S. History" by Clifton H. Johnson, *Journal of the New Haven Colony Historical Society*, Spring 1990

Hands-on Toys [p. 128]

Recycled, Re-Seen: Folk Art from the Global Scrap Heap (exhibition catalog), edited by Charlene Cerny and Suzanne Seriff, Harry N. Abrams, 1996

Bernarr Macfadden [p. 136]

Weakness is a Crime by Robert Ernst, Syracuse University Press, 1991

"Bernarr Macfadden" by Ben Yagoda, *American Heritage*, December 1981

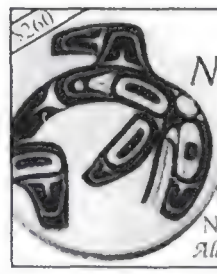
For information and reservations, contact:
Unique Destinations
120 Elmdale Road,
North Scituate, RI 02857
Voice and Fax: 401-934-3398
E mail: uniquedest@aol.com

Jamaica's Heart & Soul Retreat
Port Antonio
JAMAICA

Authors Wanted

Successful, full service, subsidy publisher can transform your manuscript into an attractive, quality book — and promote it. Send your completed work for a no-cost, no obligation assessment — or request a free brochure.

Rutledge Books, Inc. • 1-800-278-8533
Dept. SMX • P.O. Box 315 • Bethel, CT 06801



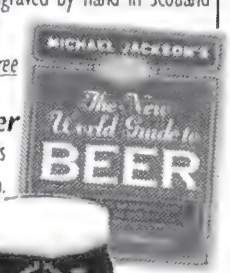
Alaska Traditional
NW Coast Indian Drums
Each ceremonial drum is a collector's item
Hand crafted and painted by well-known Tsimpshean artist Roxana Leask
No two are alike 1-888-791-8273
Alaska Heritage Arts • www.alaska-art.com

Facing Prostate Cancer?
Explore all the options.
For FREE information call
Theragenics Cancer Information Center,
1-800-458-4372

Gifts in the British Spirit

The Malt Whisky File
The indispensible reference for Scotland's national drink. Full Color Hardback. 224 pages. John Lamond & Robin Cook
$29.95 *Includes Gift Box & Shipping*

Thistle . . . by Edinburgh Crystal since 1896
Blown, cut, etched & engraved by hand in Scotland
Whisky Glass $55.95
Gift Boxed & Shipped Free



The New World Guide to Beer
World's best selling beer reference by the world's leading beer writer, Englishman Michael Jackson.
Full Color Hardback. 256 pages. .
$29.95 *Includes Gift Box & Shipping*

English Pub Glasses
20 oz. Imperial Pints, etched with the Official Royal Measure Seal. Imported from England. A full measure for beer lovers !
4 for $24.95 *Gift Boxed & Shipped Free*
Additional Pub Glasses only $5 ea

Royal Mail 800-843-9078
Box 902, Harrisville, NH 03450 • Visa MC AX Dis • Free Brochure

Send $3 for catalog

MARY LAURA'S
SOUTHWESTERN ARTS

To Order Call 1-800-662-4848

Visa • Mastercard • American Express • Diner's Club
Intl. (505) 839-2256 • Toll Free FAX 1-800-468-3236
$3.00 Shipping & Handling
900 Old Coors Road, S.W., Dept. SM
Albuquerque, NM 87121-3308 U.S.A.

The Smithsonian Traveler

SMITHSONIAN STUDY TOURS

Credit Cards Now Accepted!
Smithsonian•Discover
VISA•MasterCard

Call or write for your FREE **Smithsonian Study Tours** catalogs, featuring more than 300 educational tours to 250 exciting destinations in the United States and abroad!

Smithsonian Study Tours offer unparalleled educational travel opportunities. Enjoy traveling with engaging study leaders and fellow Smithsonian Associates.

International Tours

City Interludes *Throughout the year* Extended stays in some of the world's great cities: London, Paris, Venice, Florence, Hong Kong, Kyoto, Vienna, Berlin, Prague, Istanbul, St. Petersburg and Krakow.

Countryside Tours *Throughout the year* Relaxing sojourns in France, England, Scotland, Wales, Austria, Switzerland, Italy, Hungary, the Czech Republic and Mexico.

Classical Greece *April 11-25*

Splendors of Greece and Turkey *April 16-May 1* Aboard the *Regina Renaissance.*

Naples and Amalfi Coast (Italy) *April 19-30*

Dutch Waterways *April 21-May 4* Aboard the *Swiss Crystal.*

Vanishing Gorges: Spring Sojourn on the Yangtze River (China) *April 21-May 5* Aboard the *Splendid China.*

Ancient Cultures of the Western Mediterranean *May 2-12* Aboard the *Sea Cloud.*

Splendors of Italy *May 6-19* Aboard the *Regina Renaissance.*

Splendors of Western Turkey *May 12-28*

Norway Coastal Voyage *May 13-25 or September 3-15* Aboard a coastal steamer.

French Waterways *May 22-June 2* Aboard the *Anacoluthe.*

Journey through Central Europe *May 27-June 8*

Czech Walks *May 28-June 7*

Amazon Voyage *May 30-June 6 or August 1-8* Aboard the *Turmalina.*

Along Turkey's Ancient Coast *June 1-14* Aboard the *Panorama.*

U.S. & Canada Tours

Smithsonian "Anytime" Weekend (Washington, D.C.) Bring your family to see the nation's capital and enjoy the many free activities on the Mall. Packages begin at $215 for two persons for two nights and include a private tour of the Castle.

American Snapshots Celebrate the historic towns and working communities that are the fabric of our culture and heritage. **Amelia Island (Florida)** *April 16-19*, **Ohio's Amish Country** *April 30-May 3*, **Eastern Wisconsin** *September* and **Puget Sound (Washington)** *September 24-27*

Colonial South: Jacksonville to Charleston *April 4-11* Aboard the *Nantucket Clipper.*

NEW! **Civil War: Contest for the Capitals (Middle Atlantic States)** *April 23-May 3*

NEW! **San Francisco Bay Arts** *April 24-30*

NEW! **Civil War in Western Territories (New Mexico and Arizona)** *May 4-10*

Gardens of the Delaware Valley *May 8-14*

NEW! **Footsteps of Geronimo (Arizona)** *May 8-16*

A Sampling of Learning Adventures for

To request a catalog or brochure, please call (202) 357-4800. For all other information, call (202) 357-4700; or write to The Smithsonian Associates, MRC 702, Washington, DC 20560

NEW! **Cincinnati Art and Architecture (Ohio)** *May 20-24*

Grand Canyon Sampler (Arizona) *June 5-8 or September 4-7*

SMITHSONIAN SEMINARS

Concentrated study of specific topics:

Jefferson's Architectural Masterpieces (Charlottesville, Virginia) *April 2-5*

New Orleans Jazz Festival *April 22-26*

Garden Design: Past, Present and Future (Washington, D.C.) *April 23-27*

Culinary Arts of China *May 11-25*

Contemporary Arts and Crafts of the Pacific Northwest (Seattle) *May 13-17*

ODYSSEY TOURS

Moderately priced tours with several departure dates in 1998:

NEW! Sojourn in Greece: An All-Inclusive Stay in Vravrona 15-night tours in *January, February and March*

NEW! Sojourn in Thailand: A Stay in Chiang Mai 16-night tours in *January, February and March*

Natural Wonders of Costa Rica 9-night tours in *January, February and March*

Egypt and the Nile Cruise 14-night tours in *February and March*

For a Smithsonian Odyssey Tours brochure, call 1-800-932-8287

Visit us on-line at: www.si.edu/tsa/sst

Smithsonian Associates

SMITHSONIAN (ISSN 0037-7333) is published monthly by the Smithsonian Associates, 900 Jefferson Drive, Washington, DC 20560. © Smithsonian Institution 1997. All rights reserved. Reproduction in whole or in part without permission is prohibited. Editorial offices are at 900 Jefferson Drive, SW, Washington, DC 20560 (202-786-2900). Advertising and circulation offices are at 420 Lexington Ave., New York, NY 10170 (212-490-2510). **Subscription Prices:** United States and possessions: $24 a year payable in U.S. funds. Canada and all other countries: add $13 (U.S. funds) for each year. 80 percent of dues is designated for magazine subscriptions. Current issue price is $4 (U.S. funds). Back issue price is $5 (U.S. funds). Periodical postage paid at Washington, DC and additional mailing offices. **Mailing Lists:** From time to time we make our subscriber list available to companies that sell goods and services by mail that we believe would interest our readers. If you would rather not receive such mailings, please send your current mailing label, or an exact copy, to: SMITHSONIAN, Mail Preference Service, P.O. Box 420311, Palm Coast, FL 32142-0311. **Subscription Service:** Should you wish to change your address, or order new subscriptions, you can do so by writing SMITHSONIAN, P.O. Box 420311, Palm Coast, FL 32142-0311, or by calling 1-800-766-2149. Postmaster: Send address changes to SMITHSONIAN, P.O. Box 420312, Palm Coast, FL 32142-0312. Printed in the USA.

Statement of ownership, management and circulation (required by 39 U.S.C. 3685) of SMITHSONIAN published monthly at the Smithsonian Institution, 900 Jefferson Drive, Washington, D.C. 20560 for October 1, 1997. General business offices of the publisher are located at 900 Jefferson Drive, Washington, D.C. 20560. Name and address of publisher is Ronald C. Walker, 900 Jefferson Drive, Washington, D.C. 20560. Owner is Smithsonian Institution, 900 Jefferson Drive, Washington, D.C. 20560. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: None. The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes have not changed during preceding 12 months (Section 411.3, DMM). The average number of copies of each issue during the preceding 12 months are: (A) Total number of copies printed: 2,176,007; (B) Paid circulation: (1) Sales through dealers and carriers, street vendors and counter sales: 9,106; (2) Mail subscriptions: 2,125,329; (C) Total paid circulation: 2,134,435; (D) Free distribution by mail:8,756; (E) Free distribution outside the mail: 6,518; (F) Total free distribution: 15,274; (G) Total distribution: 2,149,709; (H) Copies not distributed: (1) Office use, left-overs, spoiled: 4,609; (2) Returns from news agents: 21,689; (I) Total: 2,176,007. Percent paid and/or requested circulation: 99.3%. The actual number of copies of single issue published nearest to filing date are: (A) Total number of copies printed: 2,134,134; (B) Paid circulation: (1) Sales through dealers and carriers, street vendors and counter sales: 10,161; (2) Mail subscriptions: 2,074,234; (C) Total paid circulation: 2,084,395; (D) Free distribution by mail: 9,641; (E) Free distribution outside the mail: 6,552; (F) Total free distribution: 16,193; (G) Total distribution: 2,100,588; (H) Copies not distributed: (1) Office use, leftovers, spoiled: 10,371; (2) Returns from news agents: 23,175; (I) Total: 2,134,134. Percent paid and/or requested circulation: 99.2%. I certify that all information furnished is true and complete.
(signed) Carey O. Randall
Associate Publisher, Administration

COUNTRY WALKERS
19 Years of excellence in Worldwide Walking Vacations
• *Europe, Africa, North & South America and the South Pacific*
Free catalog call 800-464-9255
www.countrywalkers.com

GRANDE BAROQUE & OLD MASTER
Brand New Sterling Silver
by Wallace/Towle Silversmiths

	4 pc.	5 pc.
GRANDE BAROQUE	$145	$185
OLD MASTER	$125	$159

Over 1500 patterns of active & discontinued sterling patterns, estate or new - at very affordable prices.
THE SILVER QUEEN INC
OUR 25th YEAR
730 N. Indian Rocks Rd.
Belleair Bluffs, FL 33770
(800)262-3134
(813)581-6827
FAX: (813)586-0822
Visa, Mastercard, Discover.
CALL FOR FREE CATALOG
WE ALSO BUY STERLING

Handmade Caribbean Jewelry

"Yacht" brass/copper pendant (shown) $55
For a free brochure call or write to:
Island Treasures
P.O. Box 11612 Burke, VA 22009
1-888-413-4787

www.dallaspridgenjewelry.com
DALLAS PRIDGEN JEWELRY
One at a time, by hand

"Rabbits" Bracelet, 9 links
14K Gold $595, Sterling $165
Pendant 14K $98, Sterling $35. V/MC/Amex
Unconditionally Guaranteed. 1-800-477-1856
PO Box 147, Chapel Hill, NC 27514

★ Schooner ★
KATHRYN B.
105 Feet of Luxury
Yesterday's Traditions • Today's Comforts
1-800-500-6077 • P.O. Box 133 • Hope, Maine 04847
MAINE SUMMERS • CHESAPEAKE AUTUMNS • CARIBBEAN WINTERS

The Tea Club
Each month brings 2 rare and outstanding teas from the world's finest estates and growing regions.
A TERRIFIC GIFT
1-800-FULL-LEAF
(800-385-5532)

PERSONALIZED
CARTOUCHE JEWELRY
Your name translated into Egyptian hieroglyphics.
HANDMADE IN EGYPT
18K Gold from $150
Sterling Silver $40 • S/H $4.00
TO ORDER CALL,
1 (800) 447-2504
VISA • MC • AMEX
FREE BROCHURE
LITTLE EGYPT IMPORTS
P.O. Box 32977
Spells "Mary" Kansas City MO 64171 Spells "Lisa"

SAFARI ENCHANTMENT
Hand-woven bracelet
adjusts to fit him or her

Silver.....$120.
Silver/Gold Knots.....$250.
14K Gold.....$790.
call: 800 807-4147
Sara Jacob Jewellery
visit us at
www.sara-jacob.com

THE LAST PAGE

If a Mustache Becomes You, Don't Cut It Off

BY TED GUP

IT WAS MY WIFE'S IDEA TO TAKE it off. Every few weeks she'd drop another hint. "I've never seen you without it," she would say. The "it" was my mustache, a luxurious hedge of salt-and-pepper bristles that had hidden my upper lip for 22 years.

That's a long time—long enough for it to have become the essence of how I saw myself, the equatorial line that centered my self-image. Around it my razor showed deference. Like some topiary artist, I was careful not to diminish it by so much as a single hair. Daily I combed it out with an old toothbrush and weekly I tamed it with an electric razor that tickled my lip. A fetish? If you like, but I didn't see it that way, at least not until my wife started dropping hints.

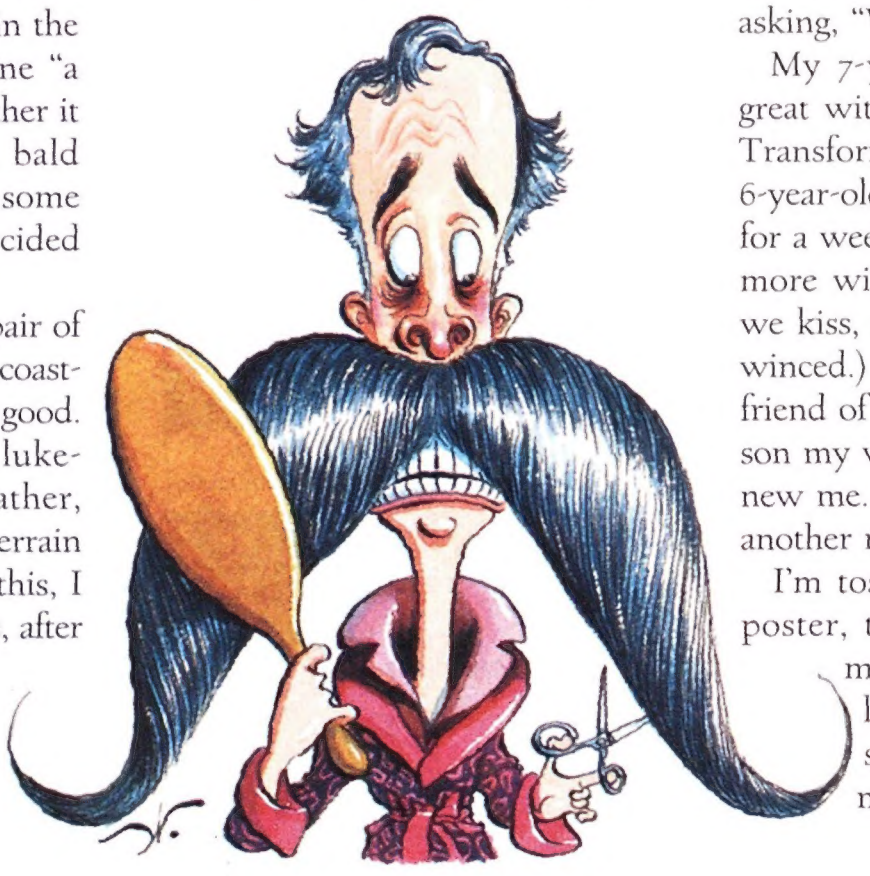
In the end, it was not her prodding but my own curiosity that got the better of me. I couldn't help but wonder who I was in its absence, or what it was I feared. At 46, I looked in the mirror and remembered the line "a face like an unmade bed." Whether it was the false lure of youth, bald (excuse the pun) curiosity or some perverse narcissistic urge, I decided late one night that it had to go.

First I pruned it with a tiny pair of nail scissors, exposing a delicate coastline unseen for years. So far, so good. Then I turned on the tap to lukewarm, filled my palm with lather, and dabbed it onto the sylvan terrain between mouth and nose. For this, I would need a fresh blade. It was, after all, a ritual sacrifice.

One swipe, then another. I was stunned how many white whiskers hugged the sink. And then, within seconds, my blessed mustache was gone, coursing through the pipes on its way to the great sea beyond. With a splash of water and a pat of the towel I slowly raised my eyes to the mirror.

There, staring out at me, was the kid from high school, the one I'd spent more than a quarter-century trying to escape—that adenoidal nerd, the one who never got the girl or caught the pass. My lip was a naked enormity on the scale of Mount Rushmore, a sickly white like the gilled underside of a toadstool. I was looking at a freak of nature, a weird kind of Dorian Gray, reduced to all I thought I had outgrown.

Whether it was the false lure of youth or some perverse narcissistic urge, I decided it had to go.



"Ridiculous," I told myself. "I'm overreacting." But each time I passed a mirror or saw my reflection in a storefront I got a jolt, wondering who was shadowing me. My friends just stared, cocking their heads and smothering a laugh. "Something's different," mused one, relishing my torment. "Have you been sick?" asked another. For days I talked through a cupped hand or an index finger curved above my lip.

Well, I had promised my wife I'd give it a "reasonable time," and if I was still in agony I would grow it back. Three weeks and still my teeth scrape my upper lip, searching for the wiry hairs that once collected cookie crumbs and strained the pulp from my orange juice. Like a legless Ronald Reagan in the movie *Kings Row*, I find myself asking, "Where's the rest of me?"

My 7-year-old thought I looked great without it—but then, he's into Transformers and Goosebumps. My 6-year-old wouldn't let me near him for a week. My wife? She likes it. No more wild hairs up her nose when we kiss, she says. (So that's why she winced.) But the other day a woman friend of mine suggested another reason my wife so eagerly embraces this new me. She said it's like being with another man. That did it!

I'm tossing this stranger, this imposter, this home wrecker, out of my bed, my house and my life. I'm reclaiming my old self-image. I'm growing my mustache back.

Our Trans World One passengers might think we have the fastest flights across the Atlantic.

Of course, it may have something to do with our seats.

Of all the luxuries on a transatlantic flight, the chance to stretch out is the ultimate. That's why our Trans World One® seats are so impressive. Because they're not just seats; they're recliners specially engineered for comfort. So you can truly lie back and relax. We've also designed our cabins to give you more space to enjoy them. In fact, we offer the most legroom of any business class in our spacious 767s, for the most comfort you can get for a business-class fare. Along with a modified version of this comfort to Lisbon and Barcelona. Have a seat, and feel what we mean.

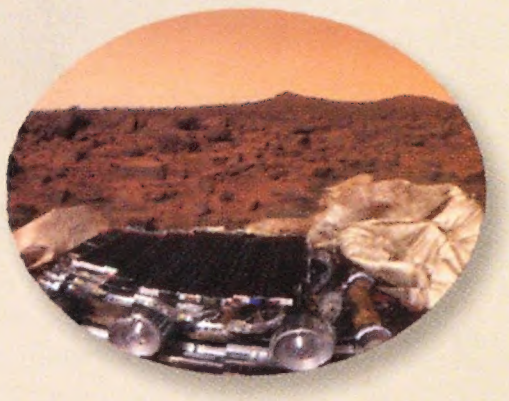
For reservations, call your travel professional or TWA® at 1·800·892·4141.

Visit us online at www.twa.com

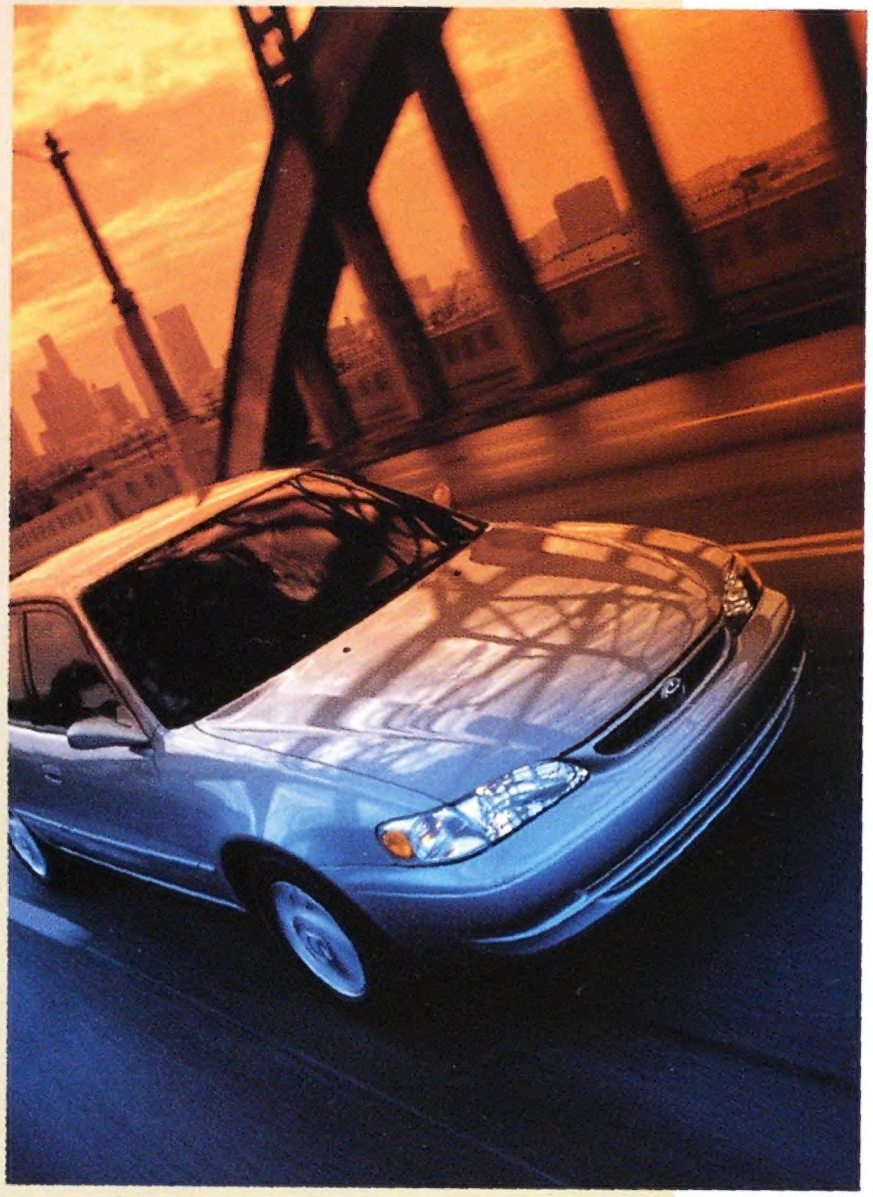
WE WANT TO BE YOUR AIRLINE.™ TWA®

New York St. Louis London Paris Tel Aviv Madrid Rome Lisbon Milan Barcelona Cairo Riyadh

the moon, late 1960's



mars, late 1990's



corolla, 1998

COROLLA

my, my, how things have changed.

corolla, 1968

If you live long enough, you're liable to see just about anything. Pictures from Mars. Presidential candidates blowin' the sax. The Macarena. Next thing you know, somebody will be telling you with a straight face, that the Corolla has even changed too. Well guess what, it has. It's secure, quiet and more powerful than ever before. The all-new 1998 Corolla. Proof that small steps can indeed lead to one giant leap.

TOYOTA | everyday

1800-GO-TOYOTA ✦ www.toyota.com

© 1997 Toyota Motor Sales, U.S.A., Inc. Buckle Up!
Do it for those who love you. Mars source: NASA 1997